

ENVIRONMENTAL ASSESSMENT



**US Army Corps
of Engineers®**
Tulsa District



CITY OF YUKON WATERLINE PROJECT Yukon, Oklahoma

March 2007

Prepared By:



3020 Northwest 149th Street
Oklahoma City, Oklahoma 73134

**ENVIRONMENTAL ASSESSMENT
FOR
CITY OF YUKON WATERLINE PROJECT
YUKON, OKLAHOMA**

PREPARED FOR:



**US Army Corps
of Engineers[®]
Tulsa District**



The City of Yukon, Oklahoma

Prepared by:

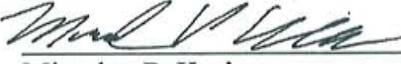
**Triad Design Group, Inc.
3020 Northwest 149th Street
Oklahoma City, Oklahoma 73134**

March, 2007

FINDING OF NO SIGNIFICANT IMPACT

In accordance with the National Environmental Policy Act of 1969, including guidelines in 33 Code of Federal Regulations, Part 230; the Tulsa District has assessed the environmental impacts of a 24" water transmission pipeline and two associated 500' x 500' storage tank facilities for the City of Yukon, Oklahoma. The first section of pipeline extends west from about one-half mile east of Council Road along the south side of Southwest 29th Street for approximately 5.5 miles then north approximately 3 miles along the west side of Czech Hall Road to Northwest 10th Street in Yukon, Oklahoma. The associated 500' x 500' storage tank facility is located at the east end of the project east of Council Road. It would be located on the south side of Southwest 29th Street adjacent to the existing pumping station. The second section of pipeline would begin at U.S. Highway 66 and Cemetery Road. It would follow U.S. Highway 66 west for one mile to Frisco Road where it would turn south for approximately three-quarters mile to an access road north of Interstate 40. It would follow the access road alignment southeast to Vandament Avenue where it would turn eastward along Vandament Avenue to its end at the half mile point between Frisco Road and Cemetery Road. The associated 500' x 500' storage tank facility would be located approximately one-quarter mile south of U.S. Highway 66 on the west side of Frisco Road. The pipeline corridor study area is 65 feet wide, extending from the section line (centerline of roadway). This assessment was prepared in accordance with the U. S. Army Corps of Engineers Regulations, Part 230, Policy and Procedures for Implementing the National Environmental Policy Act. It has been determined from the enclosed Environmental Assessment that the project would have no significant adverse effects on the natural or human environment. Therefore, an environmental impact statement will not be prepared.

2 APR 07
Date


Miroslav P. Kurka
Colonel, U.S. Army
District Engineer

Enclosure:
Environmental Assessment

ENVIRONMENTAL ASSESSMENT ORGANIZATION

This Environmental Assessment (EA) evaluates the effects of a proposed 24" Water Transmission Pipeline for the City of Yukon, Oklahoma. The project extends along the south side of Southwest 29th Street from approximately one half mile east of Council Road in Oklahoma City, Oklahoma approximately 5.5 miles west then north approximately 3 miles on the west side of Czech Hall Road to Northwest 10th Street in Yukon, Oklahoma. Additionally, there is a 500' x 500' storage tank facility proposed at the east end of the project approximately .5 miles east of Council Road on the south side of SW 29th Street adjacent to the existing pumping station. Moreover, there is a 500' x 500' storage tank facility proposed and approximately 2 miles of associated supply pipeline. Please note this location shown in the northwest portion of the enclosed USGS map (Figure 1, located in Section 4 of the Environmental Assessment). The pipeline corridor study area is 65 feet wide, extending from the section line (centerline of roadway). This EA will facilitate the decision process regarding the proposed action and alternatives.

This is a Water Resource Development Authority Section 219 (Environmental Infrastructure) Project, which was authorized in the Consolidated Appropriations Act 2001 in Section 108. The legislation authorized the United States Army Corps of Engineers to provide technical, planning and construction assistance at a Federal expense not to exceed \$5,500,000 for a water-related infrastructure project. Thus far, Federal appropriations have been \$4,125,000. The project will be cost shared at the rate of 75% Federal and 25% non-Federal. The sponsor (City of Yukon) will contribute a minimum of \$1,375,000 from general obligation bonds for a total project cost of \$5,500,000. Any project cost that exceeds the \$5,500,000 will be borne entirely by the sponsor. The sponsor will meet its 25% share by providing lands, easements, rights-of-way, and cash for the construction.

The project purpose is to install a parallel water transmission line to replace the existing 35-year old transmission line. The City of Yukon's primary water source is 15 wells located in close proximity to the Will Rogers International Airport in Oklahoma City, Oklahoma. The existing and proposed well field transmission line is located in the corporate limits of the City of Oklahoma City. During peak demand the City of Yukon supplements the well field with purchased water from the Oklahoma City Water Utilities Trust. The water supply from these two sources is currently conveyed thru a 24-inch ductile iron pipeline. The existing 24-inch pipeline is approximately 35 years old and is the City's sole source of water. The proposed parallel pipeline will provide the City with greater reliability for the future. The City in the last five (5) years has experienced accelerated residential and commercial development that has increased demand on the water distribution system. Therefore, the City of Yukon is in need of an additional water tower to maintain current water pressure within the system.

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|------------------|--|
| SECTION 1 | AUTHORITY, PURPOSE, AND SCOPE provides the authority for the proposed action, summarizes the project purpose, provides relevant background information, and describes the scope of the EA |
| SECTION 2 | ALTERNATIVES examines alternatives for implementing the proposed action. |
| SECTION 3 | PROPOSED ACTION describes the recommended action. |
| SECTION 4 | AFFECTED ENVIRONMENT describes the existing environmental and socioeconomic setting. |
| SECTION 5 | ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION identifies the potential environmental and socioeconomic effects of implementing the proposed action and alternatives. |

- SECTION 6** **RESTORATION PLAN** summarizes mitigation actions required to enable a Finding of No Significant Impact for the proposed alternative.
- SECTION 7** **FEDERAL, STATE, AND LOCAL AGENCY COORDINATION** provides a listing of individuals and agencies consulted during preparation of the EA.
- SECTION 8** **REFERENCES** provides bibliographical information for cited sources.
- SECTION 9** **APPLICABLE ENVIRONMENTAL LAWS AND REGULATIONS** provides a listing of environmental protection statutes and other environmental requirements.
- SECTION 10** **LIST OF PREPARERS** identifies persons who prepared the document and their areas of expertise.

APPENDICES

- A** Coordination/Correspondence
B Section 404 Permit
C Fish and Wildlife Coordination
D Cultural Resources Coordination
E Public Comments (final EA only)
F Newspaper Public Notice (final EA only)

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**ENVIRONMENTAL ASSESSMENT
24" TRANSMISSION WATER PIPELINE AND STORAGE TANK FACILITY
YUKON, OKLAHOMA**

SECTION 1.0 AUTHORITY, PURPOSE, AND SCOPE

The project is to be administered by the United States Army Corp of Engineers (USACE) in joint cooperation with the City of Yukon. The scope of this project is to install a water transmission pipeline from the City of Yukon Well Field to the corporate limits of the City. Also, included is a one million gallon elevated water storage tank to provide greater service to the City's water distribution system.

The City of Yukon is an expanding community and is located approximately twelve (12) miles west of downtown Oklahoma City. The City of Yukon's primary water source is fifteen (15) wells located in close proximity to the Will Rogers International Airport in Oklahoma City, Oklahoma. The existing and proposed well field transmission line is located in the corporate limits of the City of Oklahoma City. During peak demand the City of Yukon supplements the well field with purchased water from the Oklahoma City Water Utilities Trust. The water supply from these two sources is currently conveyed thru a 24-inch ductile iron pipeline. The existing 24-inch pipeline is approximately 35 years old and is the City's sole source of water. The proposed parallel pipeline will provide the City with greater reliability for the future. The City in the last five (5) years has experienced accelerated residential and commercial development that has increased demand on the water distribution system. Therefore, the City of Yukon is in need of an additional water tower to maintain current water pressure within the system.

The National Environmental Policy Act (NEPA) of 1969 (Public Law 91-190) requires all Federal agencies to address the environmental impacts of any major Federal action on the natural and human environment. Guidance for complying with the NEPA is contained in Title 40 of the Code of Federal Regulations (CFR), Parts 1500 through 1508, and in Engineering Regulation (ER) 200-2-2, *Procedures for Implementing NEPA*. The primary intent of NEPA is to ensure that environmental information is made available to public officials and citizens regarding major actions taken by Federal agencies. This environmental assessment was developed to assure that construction of the proposed project complies with the intent of NEPA.

SECTION 2.0 ALTERNATIVES

Alternatives to the Proposed Action included a no action plan and the preferred alternative.

2.1 No Action Alternative

The Council on Environmental Quality (CEQ) regulations implementing the provisions of NEPA require Federal agencies to consider a "no action" alternative. These regulations define the "no action" alternative as the continuation of existing conditions and their effects on the environment, without implementation of, or in lieu of, a proposed action. This alternative represents the existing condition and serves as the baseline against which to

compare the effects of the other alternatives. The no action alternative would retain the existing condition and would not result in any project-related environmental impacts or losses of fish and wildlife habitat.

2.2 Action Alternative

The Action Alternative is the construction of the 24" Water Transmission Line and associated storage facility along the corridor as described below.

SECTION 3.0 PROPOSED ACTION

The proposed project extends along the south side of Southwest 29th Street from approximately one half mile east of Council Road in Oklahoma City, Oklahoma approximately 5.5 miles west then north approximately 3 miles on the west side of Czech Hall Road to Northwest 10th Street in Yukon, Oklahoma. Additionally, there is a 500' x 500' storage tank facility proposed at the east end of the project approximately .5 miles east of Council Road on the south side of SW 29th Street adjacent to the existing pumping station. Moreover, there is a 500' x 500' storage tank facility proposed and approximately 2 miles of associated supply pipeline. Please note this location shown in the northwest portion of the enclosed USGS map (Figure 1, located in Section 4 of the Environmental Assessment). The pipeline corridor study area is 65 feet wide, extending from the section line (centerline of roadway).

The alignment of the proposed pipeline was verified visually and reviewed thoroughly in order to accurately determine quantities for the cost estimate and determine special circumstances, which require additional attention. Tributaries (creeks) were carefully analyzed to determine the type of crossing, whether a traditional open cut, conventional bore, or directional drill. The visual inspection and determination of pipeline alignment took into consideration the location of the existing utilities and existing and future developments.

SECTION 4.0 AFFECTED ENVIRONMENT

4.1 Location

The project is located in both Oklahoma and Canadian Counties in central Oklahoma. The project begins within the Corporate Limits of the City of Oklahoma City and terminates within the Corporate Limits of the City of Yukon (see Figure 1).

4.2 Climate

At present the study has a temperate, sub humid climate, typical of the central part of Oklahoma. Seasonal changes vary in intensity, but the changes between seasons are gradual. Summer is usually the wettest season. Average annual precipitation varies from 23 to 35 inches. Elevation in the project area varies from approximately 1,300 to 1,350 ft above sea level.

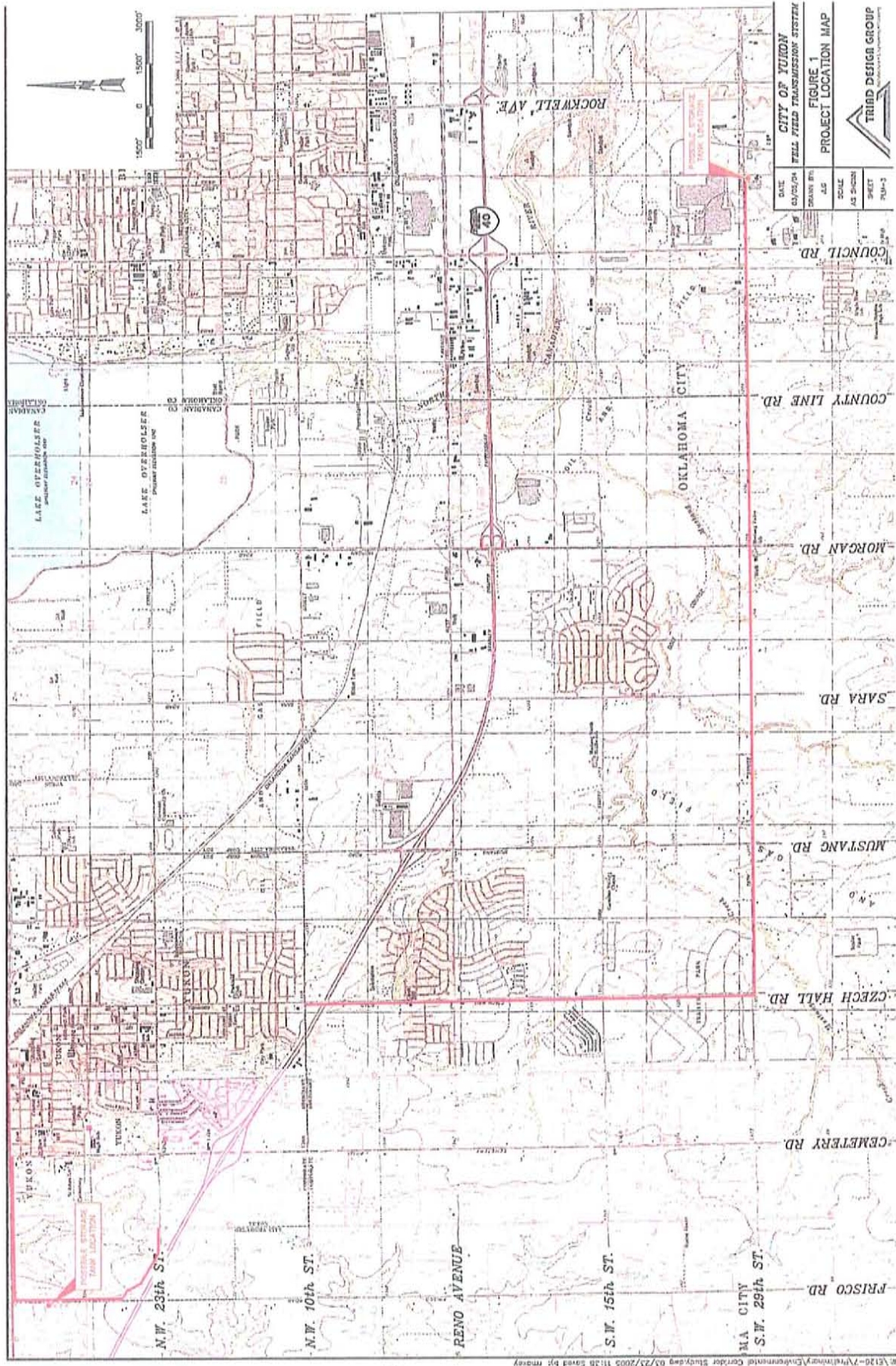


Figure 1

4.3 Social and Economic Conditions

The proposed project, while occurring both in far west Oklahoma City and the City of Yukon, primarily impacts the residents of Yukon. Because the character of the area in Oklahoma City and Oklahoma County is so similar to Yukon and Canadian County, statistics for Yukon and Canadian County have been used in this report. It is believed that using statistics for Oklahoma City or Oklahoma County would be misleading in this review.

The City of Yukon, according to the U. S. Census Bureau, had a year 2000 population of 21,043. This was up from the 1990 number of 20,935. The estimated 2005 population, also according to the Census Bureau, was 22,032. The area has shown steady growth. Yukon has an actual corporate land area of 25.77 square miles, with a population density of 816.8 people or 315.8 households per square mile. The Canadian County population is 87,697 in 33,969 households.

The ethnic makeup of Canadian County in the 2000 Census was:

White.....	87.0%
Black or African American.....	2.2%
American Indian and Alaska Native	4.3%
Asian	2.4%
Hispanic or Latino.....	3.9%
The remainder is listed as "some other race".	

The 2000 Census shows Canadian County with a median age of 35.4 years, with 72% of the population being 18 years of age or older. The "under five" population was 6.8%.

The income levels for Yukon in 2000 were as follows:

Per capita income was \$19,773, as compared to the U. S. average of \$21,587. Median household income in Canadian County as a whole was \$45,439, as compared to the United States Average of \$41,994. The state of Oklahoma, in that same time frame, had a per capita income of \$17,646 and a household income of \$33,400. The area is clearly more affluent than the Oklahoma average.

March 2005 data from the Bureau of Labor Statistics shows the United States unemployment rate at that time to be 5.4%, the Oklahoma unemployment rate was 4.6% and the Canadian County unemployment rate was 3.6%. The Department of Labor statistics showed a more recent Oklahoma unemployment rate (June 2006) at 3.9%(seasonally adjusted rate). The Census Bureau in 2003 listed 9.2% of Canadian County residents as living below the poverty level. The numbers were 14.6% for Oklahoma and 12.5% for the United States as a whole.

4.3.1 Executive Order 12898

Executive Order 12898 requires each Federal agency to make environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and

adverse human health or environmental effects of its programs, policies and activities on minority populations and low-income populations.

Under NEPA, the identification of a disproportionately high and adverse human health or environmental effect on a low-income population, minority population, or Indian tribe does not preclude a proposed agency action from going forward, nor does it necessarily compel a conclusion that a proposed action is environmentally unsatisfactory. Rather, the identification of such an effect serves to heighten agency attention to alternatives (including alternative sites), mitigation strategies, monitoring needs, and preferences expressed by the affected community or population.

Low-income populations in an affected area are identified with the annual statistical poverty thresholds from the Bureau of the Census Reports on Income and Poverty. In identifying low-income populations, agencies may consider as a community either a group of individuals living in geographic proximity to one another, or a set of individuals (such as migrant workers or Native Americans), where either type of group experiences common conditions of environmental exposure or effect.

Minorities are comprised of individual(s) who are members of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic.

Minority populations are identified where either: (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis. In identifying minority communities, agencies may consider as a community either a group of individuals living in geographic proximity to one another, or a geographically dispersed/transient set of individuals (such as migrant workers or Native American), where either type of group experiences common conditions of environmental exposure or effect. The selection of the appropriate unit of geographic analysis may be a governing body's jurisdiction, a neighborhood, census tract, or other similar unit that is to be chosen so as to not artificially dilute or inflate the affected minority population. A minority population also exists if there is more than one minority group present and the minority percentage, as calculated by aggregating all minority persons, meets one of the above-stated thresholds.

Disproportionately high and adverse human health effects: When determining whether human health effects are disproportionately high and adverse, agencies are to consider the following three factors to the extent practicable: (a) Whether the health effects, which may be measured in risks and rates, are significant or above generally accepted norms. Adverse health effects may include bodily impairment, infirmity, illness, or death; and (b) Whether the risk or rate of hazard exposure by a minority population, low-income population, or Indian tribe to an environmental hazard is significant and appreciably exceeds or is likely to appreciably exceed the risk or rate to the general population or other appropriate comparison group; and (c) Whether health effects occur in a minority

population, low-income population, or Indian tribe affected by cumulative or multiple adverse exposures from environmental hazards.

Disproportionately high and adverse environmental effects: When determining whether environmental effects are disproportionately high and adverse, agencies are to consider the following three factors to the extent practicable: (a) Whether there is or will be an impact on the natural or physical environment that significantly and adversely affects a minority population, low-income population, or Indian tribe. Such effects may include ecological, cultural, human health, economic, or social impacts on minority communities or Indian tribes when those impacts are interrelated to impacts on the natural or physical environment; and (b) Whether environmental impacts are significant and are or may be having an adverse impact on minority populations, low-income populations or Indian tribes that appreciably exceeds or is likely to appreciably exceed those on the general population or other appropriate comparison group; and (c) Whether the environmental effects occur or would occur in a minority population, low-income population, or Indian tribe affected by cumulative or multiple adverse exposures from environmental hazards.

4.3.2 Executive Order 13045

On April 21, 1997, President Clinton issued Executive Order 13045 (EO 13045), Protection of Children From Environmental Health Risks and Safety Risks, which notes that children often suffer disproportionately from environmental health and safety risks, due in part to a child's size and maturing bodily systems. The executive order defines environmental health and safety risks as risks to health or to safety that are attributable to products or substances that the child is likely to come in contact with or ingest (such as the air we breathe, the food we eat, the water we drink or use for recreation, the soil we live on, and the products we use or are exposed to). Executive Order 13045 requires Federal agencies, to the extent permitted by law and mission, to identify and assess environmental health and safety risks that may affect children disproportionately. The Order further requires Federal agencies to ensure that its policies, programs, activities, and standards address these disproportionate risks. Executive Order 13045 is addressed in this NEPA document to examine the effects this action will have on children.

4.4 Natural Resources

4.4.1 Terrestrial

The project lies within the Central Redbed Geomorphic Province of the Great Plains province of the Interior Plains geomorphic division and the Mixed Grass Plains Vegetational Region. Current land use in the area consists primarily of residential, business, cultivated crop and pasture lands.

Vegetation in the project area is associated with the Mixed Grass Prairie Plains, dominated by a combination of species found in the tall grass and short grass prairies, with the lower layer of grasses and forbs usually denser than the taller one. Low needle-leaf evergreen trees are scattered over the prairie, creating a savanna-like vegetation

community. The dominant plants on the uplands are red cedar (*Juniperus virginiana*), big bluestem (*Andropogon gerardii*) and little bluestem (*Schizachyrium scoparium*), sideoats grama (*Bouteloua curtipendula*), blue grama (*Bouteloua gracilis*), and hairy grama (*Bouteloua hirsuta*). Small groves of low broadleaf deciduous trees and shrubs occur in the valley bottoms and on north facing slopes. The dominant species in these groves are hackberry (*Celtis occidentalis*), cottonwood (*Populus deltoides*), burr oak (*Quercus macrocarpa*), plum (*Prunus sp.*), and coralberry (*Symphoricarpos orbiculatus*).

The wooded areas in the bluestem-grama prairie have fewer arboreal species and smaller trees as compared to the forested areas to the east. Cottonwoods, red cedar, and burr oaks are widely spaced along the streams and rivers, and very few herbs are present in the understory.

4.4.2 Soils

Soils to be encountered in the eight mile length of this project consist of the Binger Series, Nash Series, and Pond Creek Series. A description of these soils is as follows:

Binger Series

The Binger series consists of very gently sloping to gently sloping soils on uplands. These soils formed under a cover of grasses in material weathered from sandstone. In a representative profile the surface layer is reddish-brown fine sandy loam about 10 inches thick. The subsoil is red sandy clay loam about 22 inches thick. The underlying material is red, weakly cemented sandstone to a depth of 40 inches. Binger soils are well drained. Permeability is moderate, and the available water capacity is medium. The water table is at a depth of more than 6 feet. Representative profile of Binger fine sandy loam, 1 to 5 percent slopes, 220 feet south and 120 feet west of the northeast corner of sec. 27, T. 11 N., R. 5 W.

Ap -0 to 10 inches, reddish-brown (2.5YR 4/4) fine sandy loam, dark reddish brown (2.5YR 3/4) moist; weak, fine, granular structure; slightly hard, very friable; many fine roots, neutral; clear, smooth boundary.
B2t- 10 to 32 inches, red (2.5YR 4/6) sandy clay loam, dark structure parting to weak, fine, subangular blocky; hard, friable; many fine roots; clay films on faces of peds; neutral; clear, wavy boundary.
C- 32 to 40 inches, red (2.5YR 5/6), weakly cemented sandstone; mildly alkaline.

Depth to sandstone ranges from 26 to 38 inches. The A1 or Ap horizon is reddish brown or red. The B2t horizon is reddish-brown or red sandy clay loam or fine sandy loam. The C horizon is weak-red or red sandstone that is ripplable.

Nash Series

The Nash series consists of gently sloping and sloping soils on uplands. These soils formed under a cover of grasses in material weathered from sandstone.

In a representative profile the surface layer is reddish-brown loam about 11 inches thick. The upper 14 inches of the subsoil is reddish brown loam, and the lower 8 inches is red loam. The underlying material is red sandstone to a depth of 40 inches.

Nash soils are well drained. Permeability is moderate, and the available water capacity is high. The water table is at a depth of more than 6 feet.

Representative profile of Nash loam in an area of Nash-Quinlan complex, 3 to 8 percent slopes, 200 feet east and 700 feet north of the southwest corner of sec. 14, T11N, R5W.

A1 -0 to 11 inches, reddish-brown (5YR 4/3) loam, dark reddish brown (5YR 3/3) moist; moderate, fine, granular structure; hard, friable; many fine roots, slightly acid; gradual, smooth boundary.

B2- 11 to 25 inches, reddish-brown (2.5YR 4/4) loam, dark reddish-brown (2.5YR 3/4) moist; weak, fine, subangular blocky structure; hard, friable; many fine roots; slightly acid; gradual, smooth boundary.

B3- 25 to 33 inches, red (2.5YR 4/6) loam, dark red (2.5YR 3/6) moist; weak, medium granular structure; hard, friable; few fine roots; neutral; gradual, wavy boundary.

C- 33 to 40 inches, red (2.5YR 5/6), weakly consolidated sandstone; moderately alkaline.

Depth to sandstone ranges from 20 to 40 inches. The A1 or Ap horizon is reddish-brown, reddish-gray, or dark reddish-gray loam or silt loam. It is slightly acid or neutral. The B2 horizon is reddish-brown, yellowish-red, or red loam or silt loam. It is slightly acid or neutral. The B3 horizon is red or yellowish-red loam or silt loam. It is neutral or mildly alkaline. The C horizon is sandstone that is ripplable. It is mildly alkaline or moderately alkaline.

Pond Creek Series

The Pond Creek series consists of nearly level and very gently sloping soils on uplands. These soils formed under a cover of grasses in material weathered from loamy sediments. In a representative profile the surface layer is dark grayish-brown silt loam about 14 inches thick. The upper 5 inches of the subsoil is grayish-brown silty clay loam; the next 17 inches is dark-brown silty clay loam; and the lower 30 inches is brown silty clay loam. Pond Creek soils are well drained. Permeability is moderately slow, and the available water capacity is high. The water table is at a depth of more than 6 feet. Representative profile of Pond Creek silt loam, 0 to 1 percent slopes, 1,700 feet south and 1,700 feet west of the northeast corner of sec. 9, T. 12 N., R. 8 W.

Ap—0 to 7 inches, dark grayish-brown (10 YR 4/2) silt loam, very dark grayish brown (10 YR 3/2) moist; moderate, fine, granular structure; slightly hard, friable; many fine roots; medium acid; abrupt, smooth boundary.

A- 7 to 14 inches, dark grayish-brown (10 YR 4/2) silt loam, very dark grayish brown (10 YR 3/2) moist; moderate, medium, granular structure; slightly hard, friable; common fine roots; slightly acid; clear, smooth boundary.

B1- 14 to 19 inches, grayish-brown (10 YR 5/2) silty clay loam, very dark grayish brown (10 YR 3/2) moist; weak, medium, subangular blocky structure; slightly hard, friable; common fine roots; neutral; gradual, smooth boundary.

B21t- 19 to 36 inches, dark-brown (10 YR 4/3) silty clay loam, dark brown (10 YR 3/3) moist; moderate, medium, subangular blocky structure; hard, firm; few fine roots; few, fine, black concretions; nearly continuous clay films on faces of peds; neutral; gradual, smooth boundary.

B22t- 36 to 48 inches, brown (10 YR 5/3) silty clay loam, dark brown (10 YR 4/3) moist; moderate, medium, blocky structure; hard, firm; few fine roots; few, fine, black concretions; nearly continuous clay films on faces of peds; mildly alkaline; gradual, smooth boundary.

B23t- 48 to 60 inches, brown (10 YR 5/3) silty clay loam, dark brown (10 YR 4/3) moist; weak, medium, blocky structure; hard, firm; few, fine, black concretions; nearly continuous clay films of faces of peds; few, fine, soft masses and films of secondary carbonates; few fine concretions of calcium carbonate; calcareous; moderately alkaline; gradual, smooth boundary.

B3- 60 to 66 inches, brown (10 YR 5/3) silty clay loam, dark brown (10 YR 4/3) moist; weak, medium, blocky structure; hard, firm; few, fine, black concretions; patchy clay films on faces of peds; few, fine, soft masses and films of secondary carbonates; few fine concretions of calcium carbonate; calcareous; moderately alkaline.

The Ap or A1 horizon is brown, dark brown, grayish brown, or dark grayish brown. It is medium acid or slightly acid. The B1 horizon is brown, dark-brown, grayish-brown, or dark grayish-brown loam, silt loam, or silty clay loam. It is slightly acid or neutral. The B21t and B22t horizons are brown, dark-brown, yellowish-brown, or dark yellowish-brown clay loam or silty clay loam. They are neutral or mildly alkaline. The B23t and B3 horizons are brown, dark brown, yellowish-brown, dark yellowish-brown, or reddish-yellow silty clay loam or clay loam. They are neutral to moderately alkaline. In some areas the B3 horizon is mottled in shades of brown. Bedrock is at a depth of more than 60 inches.

4.4.3 Prime Farmland

Soil that is prime or unique farmland as defined in the Farmland Protection Policy Act is classified as prime farmland. According to the U.S. Department of Agriculture's Natural Resource Conservation Service, it is soil that is best suited for producing food, feed, forage, fiber and oilseed crops. The soils found along the proposed project's corridor have not been classified as prime farmland.

4.4.4 Wild and Scenic Rivers

There are no streams within the proposed project area that are classified as wild and scenic pursuant to the Federal Wild and Scenic Rivers Act, Public Law 90-542.

4.4.5 Aquatic and Wetlands

In this portion of Oklahoma, summer is usually the wettest season. Average annual precipitation varies from 23 to 35 inches. As a result of a thorough background search along with an onsite investigation of the project site, no areas exhibited the required wetland parameters for inclusion in a wetland findings report. However, at least twelve (12) drainage systems and/or tributaries and main channel creeks traverse or parallel the corridor. The proposed pipeline will not affect the floodplain as this project will not place fill material in the floodplain. This project does not traverse through State of Oklahoma property, which is in a floodplain. Appropriate attention will be given during project development, design and construction to ensure compliance with Section 404 of the Clean Water Act in accordance with the Department of the Army Regulatory Program Determination in Appendix B.

4.4.6 Fish and Wildlife

Historically the major grazing animals in the area were bison (*Bison bison*) and pronghorn (*Antilocapra americana*). Major predators were the wolf (*Canis lupus*), coyote (*Canis latrans*), and gray fox (*Urocyon cinereoargenteus*). Woodlands along streams supported wapiti (*Cervus elaphus*), whitetailed deer (*Odocoileus virginianus*), and cottontail (*Sylvilagus floridanus*). Additionally, there were many burrowing animals such as prairie dogs (*Cynomys ludovicianus*), pocket mice (*Chaetodipus spp.*), kangaroo rats (*Dipodomys elator*), and their predators badger (*Taxidea taxus*) and black-footed ferret (*Mustela nigripes*). Currently deer, rodents, snakes, lizards, frogs and several species of birds are the evident local animals.

4.5 Threatened and Endangered Species

The United States Fish and Wildlife Service lists six (6) threatened or endangered species for Canadian County, and the represented portion of Oklahoma County, Oklahoma. The project is located entirely within the corporate limits of the City of Yukon and the City of Oklahoma City. The project will entail minimal amounts of additional Right-of-Way (ROW); however, all areas of additional ROW are highly disturbed due to anthropogenic impacts.

Black-capped Vireo (Endangered): Black-capped vireo habitat consists of scattered trees and brushy areas. The presence of oak trees appears to be more important to the vireo than junipers. Foliage that extends to ground level is the most important requirement for nesting. Most nests are between 15 and 50 inches (35-125 cm) above ground level and are screened from view by foliage. Territories are sometimes located on steep slopes, where trees are often clumped and intermediate in height. On level terrain, preferred black-capped vireo habitat is a mixture of shrubs and smaller trees that average from eight to 10 feet high (2.5-3.5 m). Black-capped vireos will no longer use sites where many trees are nearing full size. The historic breeding distribution of the black-capped vireo extended south from south-central Kansas through central Oklahoma and Texas to central Coahuila, Mexico. At present, the range extends from Oklahoma south through the Edwards Plateau and Big Bend National Park, Texas, to at least the Sierra Madera in central Coahuila, Mexico. In Oklahoma, the black-capped vireo is found only in Blaine, Cleveland, and Comanche counties. The winter range of the black-capped vireo is not well known. It is thought to winter along the west coast of Mexico from southern Sonora to Guerrero.

Interior Least Tern (Endangered): Interior least terns favor islands or sandbars along large rivers for nesting. The sand must be mostly clear of vegetation to be used by terns. Least terns prefer shallow water for fishing. Water levels must be low enough so that nests stay dry. The historic distribution of the interior least tern was the major river systems of the Midwestern United States. These rivers included the Red, Rio Grande, Arkansas, Missouri, Ohio, and Mississippi river systems. Currently, they occur as small remnant colonies throughout their former range. In Oklahoma, interior least terns nest along most of the larger rivers, as well as at the Salt Plains National Wildlife Refuge near Jet, Oklahoma. Interior least terns winter in South America.

Whooping Crane (Endangered): Whooping cranes inhabit marshes and prairie potholes in the summer. In winter, they are found in coastal marshes and prairies. Historically, whooping cranes were found from the Northwest Territories in Canada through the Prairie Provinces and northern prairie states to Illinois. The whooping crane formerly wintered in the Carolinas, along the Texas Gulf Coast, and on the intermountain plateau of central Mexico. The main population breeds in northern Canada and winters along the Texas Gulf Coast. It passes through western Oklahoma each spring and fall during migration. The Salt Plains National Wildlife Refuge, near Jet, Oklahoma, is a very important migration stopover area. During migration, whooping cranes sometimes are sighted elsewhere in Oklahoma along rivers, in grain fields, or in shallow wetlands.

Arkansas River Shiner (Threatened, & Proposed Critical Habitat): The Arkansas River shiner historically inhabited the main channels of wide, shallow, sandy-bottomed rivers and larger streams of the Arkansas River basin. Adults are uncommon in quiet pools or backwaters, and almost never occur in tributaries having deep water and bottoms of mud or stone. Like most fishes occurring in the highly variable environments of plains streams, they use a broad range of microhabitat features. Recurrent natural flooding is important in maintaining their habitat and also helps them maintain a competitive edge over invading non-native aquatic species. The species needs more than 130 miles of unimpounded, flowing water to successfully complete its reproductive cycle. Critical habitat areas by definition

require "special management considerations and protections." A relatively intact riparian zone, along with periodic flooding in a relatively natural pattern, is important for long-term survival and recovery of the Arkansas River shiner. Among other factors, the riparian zone and associated vegetation provide space for natural flooding patterns, latitude for necessary natural channel adjustments to maintain appropriate channel morphology and geometry. They also provide nutrient input and buffering from sediment and pollutants, store water for slow release to maintain base flows, and provide protected side channel and backwater habitats for larval and juvenile Arkansas River shiners. Current known distribution for Arkansas River shiner is almost entirely restricted to about 508 miles of the Canadian/South Canadian River in New Mexico, Texas and Oklahoma. A small population still persists in the Cimarron River, based on the recent collection of eight individuals in 2004. A remnant population also may persist in the Beaver/North Canadian River of Oklahoma, based on collection of only four individuals since 1990. A non-native, introduced population occurs in the Pecos River in New Mexico; however, this population is not protected under the Endangered Species Act. Critical habitat is not being considered for the Arkansas River shiner in the Pecos River.

Bald Eagle (Threatened): Bald eagles require large trees or cliffs near water with abundant fish for nesting. They winter along oceans, rivers, lakes, or in areas where carrion is present. The bald eagle is found throughout North America. In Oklahoma, the bald eagle is primarily a winter resident and wintering eagles are most common between December and March. During that time, bald eagles congregate around reservoirs and larger rivers. Bald eagles also nest in Oklahoma and nesting pairs have increased from only one in 1981 to at least 30 active nests in recent years. Most nesting bald eagles are in eastern portions of the state, but new nesting pairs are discovered every year and their range in Oklahoma is expanding. Suitable nesting habitat is provided by reservoirs and rivers with large trees nearby for nesting and perching.

Piping Plover (Threatened): Piping plovers nest on sandy beaches along the ocean or lakes. Along rivers, piping plovers use the bare areas of islands or sandbars. They also nest on the pebbly mud of interior alkali lakes and ponds. Birds nesting on gravel have higher reproductive success than those nesting on alkali. During the winter, piping plovers use algal, mud, and sand flats along the Gulf Coast. Spoil islands in the Intracoastal Waterway are also used. Historically, piping plovers bred along the Atlantic Coast, on the Northern Great Plains, and around the Great Lakes. Piping plovers winter along the southern Atlantic and Gulf coasts, and in the Bahamas and West Indies. Although drastically reduced, remnant populations occur throughout their historic range. Piping plovers migrate through Oklahoma each spring and fall.

4.6 Cultural Resources

In order to comply with Section 106 of the National Historic Preservation Act of 1966 (as amended) a cultural resources inventory of the project area was completed by Cojeen Archaeological Services, and is included in Appendix D. The inventory methodology included review of background files at the Oklahoma Archeological Survey (OAS) in Norman. A pedestrian survey was conducted, including limited shovel testing within the

water line corridor study area. During the survey, two historic archaeological sites were recorded, but neither was determined to be eligible for listing on the National Register of Historic Places (NRHP). The Oklahoma State Historic Preservation Office (SHPO) concurred with these determinations (see Appendix D).

The water line will cross the front yard and driveway of a property listed on the NRHP, Czech Hall. In accordance with Section 106, Tulsa District determined that the proposed project would have no adverse effect on Czech Hall. However, SHPO disagreed and issued a “conditional no adverse effect” if two stipulations were met, including (1) the restoration of the yard and road to their current condition, and (2) avoidance of the paralleling sidewalk within the right-of-way. The Yukon City Manager subsequently returned the “conditional no adverse effect” letter to SHPO with his signature, concurring with the two stipulations (see Appendix D, SHPO letter dated April 13, 2005). Section 106 compliance is therefore complete for this water line project, as long as the stipulations are appropriately addressed.

4.7 Air Quality

Air quality impacts were also considered for this proposal. Micro-scale air quality analyses on similar arterial street improvements in the Oklahoma City metropolitan area indicate that no appreciable increase in carbon monoxide will result and Federal Ambient Air Quality Standards will not be exceeded. Therefore, no adverse air quality impacts are anticipated as a result of the proposed improvement.

4.8 Hazardous, Toxic, and Radiological Waste

Comprehensive research was completed to aide in the avoidance of any hazardous waste sites and /or underground storage tanks and ensure health and safety considerations. The sources examined include the National Priority List, Oklahoma RCRA Corrective Actions List, RCRA Permitted Treatment, Storage, and Disposal Facilities List, RCRA Violations and Enforcement Actions List, Oklahoma CERCLIS List, EPA’s RCRA Registered Small or Large Generators of Hazardous Waste List and the Oklahoma Corporation Commission’s Leaking Underground and Above Ground Storage Tanks List. This review provided no information sources that listed any known hazardous underground storage tank contamination issues as well as no hazardous waste disposal sites located within the extents of the preferred alternative and affected areas, nor does there appear to be any health or safety issues associated with this alternative

Finally, a site visit was conducted on October 27, 2004, for visual evidence of potential HTRW-related problems. This involved walking the project area as well as visual reconnaissance of surrounding areas. Areas of soil staining, evidence of unusual vegetative distress, drums of containerized waste, unusual topography (mounds or depressions), or other visual evidence of potential contamination were not noted at any location within the proposed project corridor.

SECTION 5.0 ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION

A summary of environmental impacts is presented in Table 5.0, Impact Assessment Matrix.

5.1 Social and Economic Impacts

5.1.1 Future Without Project Conditions

The existing 24-inch pipeline is approximately 35 years old and is the City's sole source of water. Because the current condition of the existing waterline is deteriorating, frequent shutdowns are necessary in order to repair pipeline failures. With expanding and growing population and resulting increased development, the existing waterline will likely prove to become even more problematic.

5.1.2 Future With-Project Conditions

As stated above, the City, in the last five (5) years, has experienced accelerated residential and commercial development that has increased demand on the water distribution system. The proposed 24" parallel pipeline will provide the City with greater reliability for the future.

5.2 Executive Order 12898

The proposed water transmission pipeline and storage tank would have no appreciable health effect, and possibly a positive economic impact on minorities and low income populations.

5.3 Executive Order 13045

The proposed water transmission pipeline and storage tank would have no appreciable effect on children's health and safety.

5.4. Natural Resource Impacts

5.4.1 Terrestrial

The proposed project would not result in the loss of any significant habitat or cause any significant adverse effects on the natural environment. While a few trees may be removed in the path of construction, every effort will be made to maintain trees and forbs along streams as described in Section 6.0.

5.4.2 Prime Farmland

There would be no impact on prime farmland since these soils do not occur in the project area.

5.4.3 Aquatic and Wetlands

There would be no impact on aquatic habitat or wetlands.

5.4.4 Wildlife

Construction activities would have minor, short-term impacts on the wildlife species at the immediate construction site. This disturbance would be temporary during construction.

5.5 Wetlands and Water Quality Permits

This project falls under a Nationwide Permit for Utility Lines (NWP-12) authorized pursuant to Section 404 of the Clean Water Act.

5.6 Threatened and Endangered Species

After review of the listed species and their known habitats, as outlined in Section 4.5, along with an investigation of the proposed project site, it has been determined that there is a lack of known habitat for any threatened or endangered species. Even though in portions of Oklahoma the North Canadian River is proposed for critical habitat designation for the Arkansas River Shiner, it does not include Canadian County or adjoining counties. It is not likely or provable that this project would have any impacts on state or federally listed threatened or endangered species. Therefore, it has been concluded that the project will have no effect on any state or federally listed threatened or endangered species.

In addition, the USFWS responded to an informal inquiry requesting any comments relative to the proposed project on December 2, 2004. This response, under the Endangered Species Act as “technical assistance,” was that the USFWS “does not object to implementation of the described action.”

5.7 Cultural Resources

As previously addressed in Section 4.6, one National Register-listed historic property, Czech Hall, was identified within the project corridor (see report in Appendix D). While installation of the water line was not determined to pose a threat to the structure itself, the yard, driveway, and associated sidewalk – which together contribute to Czech Hall’s integrity and therefore its eligibility to the National Register, could be adversely affected. Therefore, SHPO issued a “conditional no adverse effect”, based on two stipulations. First, the yard and road must be restored to before-project conditions. Second, the parallel sidewalk must be avoided. If both these stipulations are met, there will be no adverse effect on Czech Hall (see SHPO letter dated April 13, 2005 in Appendix D). Compliance with Section 106 of the National Historic Preservation Act of 1966 (as amended) is considered complete contingent on fulfillment of these two requirements.

5.8 Water Quality

The proposed project should not have an impact on the quality of groundwater.

5.9 Air Quality

Construction activity would have a minor temporary impact on air quality caused by heavy equipment operation and from fugitive dust (particulate) emissions in and around the project site. Construction contractors will comply with all appropriate Federal air quality regulations to limit the dispersal of particulate matter. A temporary increase in exhaust emissions would be expected during construction.

5.10 Noise

There would be an increase in noise from heavy equipment during construction, but this would be temporary and last only during the construction period.

5.11 Hazardous, Toxic, and Radiological Waste

Based on the findings of the HTRW survey discussed in Section 4.8, the potential for discovery and significant problems related to HTRW during project construction or operation is believed to be low.

5.12 Cumulative Impacts

No cumulative impacts are anticipated to occur as a result of the proposed project.

Table 5.0 Impact Assessment Matrix									
Name of Parameter	Magnitude of Probable Impact							Increasing Adverse Impact	
	Increasing Beneficial Impact			No Appreciable Effect				Minor	Substantial
	Significant	Substantial	Minor						
A. Social Effects									
1. Noise Levels							x		
2. Aesthetic Values							x		
3. Recreational Opportunities							x		
4. Transportation							x		
5. Public Health and Safety							x		
6. Community Cohesion (Sense of Unity)							x		
7. Community Growth and Development	x								
8. Business and Home Relocations							x		
9. Existing/Potential Land Use		x							
10. Controversy							x		
B. Economic Effects									
1. Property Values						x			
2. Tax Revenues						x			
3. Public Facilities and Services	x								
4. Regional Growth		x							
5. Employment							x		
6. Business Activity						x			
7. Farmland/Food Supply							x		
8. Flooding Effects							x		
C. Natural Resource Effects									
1. Air Quality							x		
2. Terrestrial Habitat							x		
3. Wetlands							x		
4. Aquatic Habitat							x		
5. Habitat Diversity and Interspersion							x		
6. Biological Productivity							x		
7. Surface Water Quality							x		
8. Water Supply							x		
9. Groundwater							x		
10. Soils							x		
11. Threatened and Endangered Species							x		
D. Cultural Resources Effects									
1. Historic Architectural Values							x		
2. Pre-Historic & Historic Archeological Values							x		

SECTION 6.0 RESTORATION PLAN

Implementation of the proposed plan would require removal and disturbance of vegetation along the construction corridor. Construction equipment would cause the bulk of this disturbance. The trench would be excavated, filled with pipeline bedding material per design and backfilled with native soil. Construction activities would temporarily impact an approximate 65-foot wide strip of terrestrial habitat consisting of grasses and forbs along the length of the corridor. Any trees or forbs on existing statutory right-of-way would be removed. Any trees and forbs within the proposed utility easement would be removed for ease of construction with the landowner being paid for damages. All areas of soil disturbance would be restored with solid slab sod installation. All stream channels are to be bored. Trees along the banks of stream channels will be preserved by continuing to bore a minimum of 15 feet on each side of the channel. Boring will be a minimum of 4 feet below the stream bed, and therefore substantially below the bank. Open trench excavation will not be used to cross the stream channels.

As described in Sections 4.6 and 5.7 (Cultural Resources), Czech Hall is a National Register-listed historic property within the water line corridor. In order to achieve a "conditional no adverse effect" on this historic property, two stipulations must be addressed, including (1) the restoration of the yard and road to their current condition, and (2) avoidance of the paralleling sidewalk within the right of way.

The Oklahoma Historic Society in their letter dated April 13, 2005 (see Appendix D) relating to Czech hall stated there would not be an adverse affect if 1) the yard and road are restored to their current condition after laying the water line, and 2) the sidewalk paralleling and just within the right-of-way is avoided. The restoration for the yard will have solid slab sod laid on all disturbed areas and the roadway will not be impacted by the project. The project construction plan documents will preserve the existing sidewalk by avoidance in the design.

SECTION 7.0 FEDERAL, STATE, AND LOCAL AGENCY COORDINATION

The draft environmental assessment (EA) was coordinated with the following agencies having legislative and administrative responsibilities for environmental protection. A copy of the correspondence from the agencies that provided comments and planning assistance for preparation of the draft EA are in the appendices. The mailing list for the 30-day public review period for this EA is in Appendix A.

U.S. Army Corps of Engineers - Tulsa District
U.S. Bureau of Reclamation
U.S. Bureau of Land Management
Natural Resources Conservation Service
Oklahoma Corporation Commission
Oklahoma Department of Environment Quality
Oklahoma Water Resources Board
Oklahoma Geological Survey

U.S. Environmental Protection Agency
U.S. Fish and Wildlife Service
U.S. Bureau of Indian Affairs
Oklahoma Archaeological Survey
Oklahoma Department of Wildlife Conservation
Oklahoma State Historical Society
Oklahoma Conservation Commission
Oklahoma Tourism and Recreation Department

SECTION 8.0 REFERENCES

1. Fish and Wildlife Service Website: www.fws.gov
2. Census Bureau Website: www.census.gov
3. Bureau of Labor Statistics Website: www.bls.gov
4. Soil Conservation Service, 1981, *Soil Survey Map Canadian County, Soil Survey Map Oklahoma County, Oklahoma*, U.S. Department of Agriculture (USDA)
5. Triad Design Group, 2004, *Water System Study*; prepared for the City of Yukon and the United States Army Corps of Engineers.

SECTION 9.0 APPLICABLE ENVIRONMENTAL LAWS AND REGULATIONS

Table 9.0
Relationship of Plans to Environmental Protection Statutes and Other Environmental Requirements

Policies Compliance of Alternatives	
<u>Federal</u>	
Archaeological and Historic Preservation Act, 1974, as amended, 16 U.S.C. 469, et seq.	All plans in full compliance
Clean Air Act, as amended, 42 U.S.C. 7609, et seq.	All plans in full compliance
Clean Water Act, 1977, as amended (Federal Water Pollution Control Act, 33 U.S.C. 1251, et seq.	All plans in full compliance
Endangered Species Act, 1973, as amended, 16 U.S.C. 1531, et seq.	All plans in full compliance
Federal Water Project Recreation Act, as amended, 16 U.S.C. 460-1-12, et seq.	All plans in full compliance
Fish and Wildlife Coordination Act, as amended, 16 U.S.C. 661, et seq.	All plans in full compliance
Land and Water Conservation Fund Act, 1965, as amended, 16 U.S.C. 4601, et seq.	All plans in full compliance
National Historic Preservation Act, 1966, as amended, 16 U.S.C. 470a, et seq.	All plans in full compliance
National Environmental Policy Act, as amended, 42 U.S.C. 4321, et seq.	All plans in full compliance
Native American Graves Protection and Repatriation Act, 1990, 25 U.S.C. 3001-13, et seq.	All plans in full compliance
Rivers and Harbors Act, 33 U.S.C. 401, et seq.	All plans in full compliance
Watershed Protection and Flood Prevention Act, 16 U.S.C. 1001, et seq.	All plans in full compliance
Wild and Scenic Rivers Act, as amended, 16 U.S.C. 1271, et seq.	All plans in full compliance
Water Resources Planning Act, 1965	All plans in full compliance
Floodplain Management (E.O. 11988)	All plans in full compliance
Protection of Wetlands (E.O. 11990)	All plans in full compliance
Environmental Justice (E.O. 12898)	All plans in full compliance
Farmland Protection Policy Act, 7 U.S.C. 4201, et seq.	All plans in full compliance
Protection of Children from Environmental Health Risks and Safety Risks (E.O. 13045)	All plans in full compliance

Note: Full compliance - Having met all requirements of the statutes, Executive Orders, or other environmental requirements for the current stage of planning.

SECTION 10.0 LIST OF PREPARERS

This EA has been prepared to assess the impacts of a 24" Water Transmission Pipeline project in Yukon, Oklahoma. The following personnel contributed to the preparation of this document:

Randall W. Maxey – Director of Planning, 5 Years Triad Design Group.

Robbie D. Williams, P.E. – Director of Municipal Engineering, 7 Years Triad Design Group;
4 Years City Engineer, City of Yukon, Oklahoma.

Chris Cojeen – Principal Investigator, Cojeen Archaeological Services.

Tiana P. Douglas – Consultant, Triad Design Group.

Appendix - A

Coordination / Correspondence

**Mailing List for City of Yukon, Oklahoma Waterline Project
Environmental Assessment**

Mr. James Allard
Field Office Manager
Bureau of Reclamation
Oklahoma City Office
4149 Highline Blvd., Ste. 200
Moore, OK 73108-2097

Mr. Philip Keasling
Wildlife Biologist
Bureau of Land Management
Oklahoma Resources Area
221 North Service Road
Moore, OK 73160-4946

Ms. Mary Lou Drywater
Field Station Manager
Bureau of Land Management
221 North Service Road
Moore, OK 73160-4946

Mr. John Melhoff
Field Office Manager
Bureau of Land Management
7906 East 33rd Street, Suite 101
Tulsa, OK 74145

Mr. Rob Lawrence
Chief
USA EPA (6EN-XP)
Compliance Assurance & Enforcement
1445 Ross Avenue
Dallas, TX 75202-2733

Mr. David Manning, Chief
Regulatory Office
Tulsa District Corps of Engineers
1645 South 101st E. Avenue
Tulsa, OK 74128

U.S. Army Corps of Engineers –
Tulsa District
ATTN: CESWT-PE-E (Mr. Stephen Nolan)
1645 South 101st E. Avenue
Tulsa, OK 74128

Mr. Dan Deerinwater
Regional Director
Bureau of Indian Affairs
Southern Plains Regional Office
P.O. Box 368
Anadarko, OK 73005

Mr. Jerry Brabander
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9014 E. 21st St.
Tulsa, OK 74129

Mr. M. Darrel Dominick
State Conservationist
The Natural Resources Conservation
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100 USDA, Suite 203
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Mr. Larry Fiddler, Director
Oklahoma Corporation Commission
Oil and Gas Conservation Division
2101 N. Lincoln Blvd., Jim Thorpe Bldg.
Oklahoma City, OK 73105

Ms. Margaret M. Graham
Environmental Review Coordinator
Oklahoma Department of Environmental
Quality
Customer Assistance Program
P.O. Box 1677
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Dr. Bob Blackburn
State Historic Preservation Officer
Oklahoma Historical Society
2704 Villa Prom, Shepard Mall
Oklahoma City, OK 73107

Mr. Greg Duffy
Director
Department of Wildlife Conservation
P.O. Box 53465
Oklahoma City, OK 73152-8804

The Honorable Terry L. Peach
Commissioner
Secretary of Agriculture
P.O. Box 528804
Oklahoma City, OK 73152-8804

Mr. Ken Norris
Oklahoma Water Resources Board
3800 North Classen
Oklahoma City, OK 73118

Mr. Mike Thralls
Executive Director
Oklahoma Conservation Commission
2800 North Lincoln Blvd., Suite 160
Oklahoma City, OK 73105

Dr. Charles J. Mankin
Director
Oklahoma Geological Survey
100 East Boyd, Room N-131
Norman, OK 73019-0628

Dr. Robert L. Brooks
University of Oklahoma
Oklahoma Archaeological Survey
111 East Chesapeake, Bldg. 134
Norman, OK 73109-0575

Ms. Kristina S. Marek
Director, Oklahoma Tourism and
Recreation Department
Division of Research and Development
15 North Robinson Avenue, Ste. 100
Oklahoma City, OK 73102-5403

Department of Housing and Urban
Development
Regional Administrative Office
P.O. box 2905
Ft. Worth, Texas 76102

Roxanne Runkel
National Park Service
P.O. Box 728
Albuquerque, NM 87504-0728

Glen Sekavec
Regional and Environmental Officer
U.S. Department of the Interior
P.O. Box 649
Albuquerque, NM 87103

Zack Taylor, Executive Director
ACOG
21 E. Main Street, Suite 100
Oklahoma City, OK 73104-5403

Federal Emergency Management Agency
Region VI, Federal Center
800 North Loop 288
Denton, TX 76201-3698

Mr. Phil Carson, Commissioner
Mr. Don Young, Commissioner
Mr. Grant Hedrick, Jr., Commissioner
Canadian County
201 N. Choctaw
El Reno, OK 73036

Senator James M. Inhofe
United States Senate
1900 N.W. Expressway, Suite 1210
Oklahoma City, OK 73118

Senator Tom A. Coburn
United States Senate
100 North Broadway, Suite 1820
Oklahoma City, OK 73102

BRAD HENRY
GOVERNOR



MIKE THRALLS
EXECUTIVE DIRECTOR

MARY FALLIN
LIEUTENANT GOVERNOR

STATE OF OKLAHOMA
OKLAHOMA CONSERVATION COMMISSION

BEN POLLARD
ASSISTANT DIRECTOR

December 16, 2004

Randall W. Maxey, Director of Planning
Triad Design Group
14313 N. May Avenue
Oklahoma City, OK 73134

RE: 24" Transmission Waterline Project; Yukon, Oklahoma

Dear Mr. Maxey:

Your request for a wetland determination for the referenced project, as described in your letter of November 2, 2004 has been reviewed using the Soil Survey of Canadian and Oklahoma Counties. Port Soil, Yahola Fine Sandy Loam, and Bethany Silt Loam were identified at the site. This is a possible hydric soil. Due to the potential impact on wetland resources, an on-site investigation may be needed. Consequently, your request has been referred to the U.S. Army Corps of Engineers for a determination. Their address and phone number is:

U.S. Army Corps of Engineers
Mr. David Manning
Chief of Regulatory Branch
1645 South 101st East Avenue
Tulsa, OK 74128-4629
918/669-7400

If you have any further questions or concerns, please contact me at 405/522-4733.

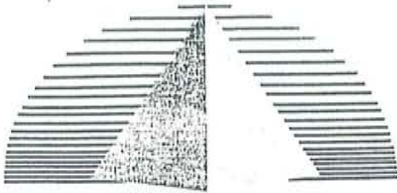
Sincerely,

A handwritten signature in black ink, appearing to read "Christopher R. DuBois".

Christopher R. DuBois
Wetlands Program Coordinator
P.O. Box 53134
2401 N. Lincoln Blvd. Rm. 224
Will Rogers Building
Oklahoma City, OK 73105

CRD/jw

cc: U.S. Army Corps of Engineers
Wetlands File



TRIAD DESIGN GROUP

November 2, 2004

Ms. Mary Lou Drywater
Field Station Manager
Bureau of Land Management
221 North Service Road
Moore, OK 73160-4946



Bureau of Land Management	
Oklahoma Field Office	
221 N. Service Road	
Moore, OK 73160	
No BLM interests will be affected by this proposed action.	
Thank you for the opportunity to comment.	
By	<i>J. Johnson</i>
Date	<i>11/19/04</i>

NOV -4 A 11:02

Re: 24" Transmission Waterline Project; Yukon, Oklahoma

Dear Ms. Drywater:

Triad Design Group, acting as agent for the City of Yukon, Oklahoma in cooperation with the United States Army Corps of Engineers, is soliciting comments on the above referenced project in Oklahoma and Canadian Counties, Oklahoma (see attached map). This project is in the early stages of development and any comments relative to the social, economic, or environmental effect of this proposal will be appreciated. The pipeline corridor study area is 65 feet wide, extending from the section line. Additional right-of-way will be required.

It is within the scope of the proposed project to complete the following:

- Construction of a 24" Water Transmission Pipeline approximately 5.5 in length located on the south side of Southwest 29th Street from approximately one half mile east of Council Road in Oklahoma City west to Czech Hall Road in Yukon, Oklahoma.
- Construction of a 24" Water Transmission Pipeline approximately 3 miles in length on the west side of Czech Hall Road from Southwest 29th Street to Northwest 10th Street in Yukon, Oklahoma.
- Construction of an above ground water storage tank facility on a piece of property measuring 500' x 500' located approximately .5 miles east of Council Road on the south side of Southwest 29th Street in Oklahoma City, Oklahoma.
- Possible construction of an above ground water storage tank facility on a piece of property measuring 500' x 500' located approximately .25 miles south of State Highway 66 on the east side of Frisco Road in Yukon, Oklahoma.

To allow adequate time for evaluation of your suggestions, we would appreciate receiving your comments within 15 days from the date of this letter. Your written comments should be directed to: Triad Design Group, Attention Mr. Randall W. Maxey, 14313 North May Avenue, Oklahoma City, OK 73134. We sincerely request your cooperation in this matter and should you desire additional information, please contact Mr. Maxey by telephone at 405-752-2266 ext. 223 or by email at rmaxey@triaddesigngroup.com.

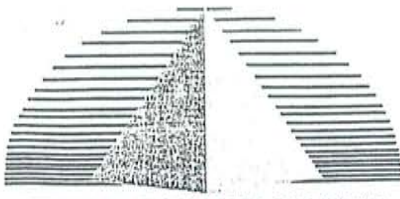
Sincerely,
Triad Design Group

R. W. Maxey

Randall W. Maxey
Director of Planning

rwm

attachment



TRIAD DESIGN GROUP

November 2, 2004

Field Office Manager
Bureau of Land Management
7906 East 33rd Street, Suite 101
Tulsa, OK 74145

Re: 24" Transmission Waterline Project; Yukon, Oklahoma.

To Whom It May Concern:

Triad Design Group, acting as agent for the City of Yukon, Oklahoma in cooperation with the United States Army Corps of Engineers, is soliciting comments on the above referenced project in Oklahoma and Canadian Counties, Oklahoma (see attached map). This project is in the early stages of development and any comments relative to the social, economic, or environmental effect of this proposal will be appreciated. The pipeline corridor study area is 65 feet wide, extending from the section line. Additional right-of-way will be required.

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- Construction of an above ground water storage tank facility on a piece of property measuring 500' x 500' located approximately .5 miles east of Council Road on the south side of Southwest 29th Street in Oklahoma City, Oklahoma.
- Possible construction of an above ground water storage tank facility on a piece of property measuring 500' x 500' located approximately .25 miles south of State Highway 66 on the east side of Frisco Road in Yukon, Oklahoma.

To allow adequate time for evaluation of your suggestions, we would appreciate receiving your comments within 15 days from the date of this letter. Your written comments should be directed to: Triad Design Group, Attention Mr. Randall W. Maxey, 14313 North May Avenue, Oklahoma City, OK 73134. We sincerely request your cooperation in this matter and should you desire additional information, please contact Mr. Maxey by telephone at 405-752-2266 ext. 223 or by email at rmaxey@triaddesigngroup.com.

Sincerely,
Triad Design Group

R. W. Maxey
Randall W. Maxey
Director of Planning

rwm

attachment

Bureau of Land Management Oklahoma Field Office 221 W. Canadian Blvd Muskogee, OK 74403	
No BLM interests will be affected by this proposed action.	
Thank you for the opportunity to comment.	
By	<i>J. W. Maxey</i>
Date	<i>11/19/04</i>

NOV 12 10 31 AM '04

BLM-OKFO-140025
NOV 12 10 31 AM '04



OKLAHOMA TOURISM & RECREATION DEPARTMENT

ROBB GRAY
EXECUTIVE DIRECTOR

November 30, 2004

Mr. Randall W. Maxey
Triad Design Group
14313 N. May Avenue
Oklahoma City, OK 73134



RE: Waterline Project in Yukon

Dear Mr. Maxey:

We have examined our records regarding park and recreation areas near the project area. There are a number of projects that have utilized federal funds under the Land and Water Conservation Fund program. Attached are descriptions of these projects.

If there will be no permanent impact on any of these federal project locations, then there will be no negative impact. If additional right-of-way will be needed that would affect any of these locations, a conversion may result in that this land is protected under Section 6F of the Land and Water Conservation Act.

Thank you for the opportunity to review this project proposal. If you have any questions, please give me a call at 405-521-2904.

Sincerely,

A handwritten signature in cursive script, appearing to read "Susan Henry".

Susan Henry, Grants
Conservation and Planning
Alternate State Liaison Officer for the
Land and Water Conservation Fund

Attachments: 2

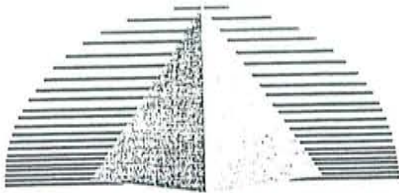
LOVE THE LAND. LOVE THE PEOPLE



Oklahoma
TODAY




15 NORTH ROBINSON
OKLAHOMA CITY, OK 73102
T (405) 521-2413 • F (405) 522-5354
WWW.TRAVELOK.COM



TRIAD DESIGN GROUP

November 2, 2004

Mr. Rob Lawrence
Chief
USA EPA (6EN-XP)
Compliance Assurance & Enforcement
1445 Ross Avenue
Dallas, TX 75202-2733

 U.S. Environmental Protection Agency Region 6 Office of Planning & Coordination (EN-XP) 1445 Ross Avenue Dallas, Texas 75202-2733	
EPA has reviewed this document and has no comments.	
Revised: <i>[Signature]</i>	Date: <i>11/09/2004</i>

Re: 24" Transmission Waterline Project; Yukon, Oklahoma.

Dear Mr. Lawrence:

Triad Design Group, acting as agent for the City of Yukon, Oklahoma in cooperation with the United States Army Corps of Engineers, is soliciting comments on the above referenced project in Oklahoma and Canadian Counties, Oklahoma (see attached map). This project is in the early stages of development and any comments relative to the social, economic, or environmental effect of this proposal will be appreciated. The pipeline corridor study area is 65 feet wide, extending from the section line. Additional right-of-way will be required.

It is within the scope of the proposed project to complete the following:

- Construction of a 24" Water Transmission Pipeline approximately 5.5 in length located on the south side of Southwest 29th Street from approximately one half mile east of Council Road in Oklahoma City west to Czech Hall Road in Yukon, Oklahoma.
- Construction of a 24" Water Transmission Pipeline approximately 3 miles in length on the west side of Czech Hall Road from Southwest 29th Street to Northwest 10th Street in Yukon, Oklahoma.
- Construction of an above ground water storage tank facility on a piece of property measuring 500' x 500' located approximately .5 miles east of Council Road on the south side of Southwest 29th Street in Oklahoma City, Oklahoma.
- Possible construction of an above ground water storage tank facility on a piece of property measuring 500' x 500' located approximately .25 miles south of State Highway 66 on the east side of Frisco Road in Yukon, Oklahoma.

To allow adequate time for evaluation of your suggestions, we would appreciate receiving your comments within 15 days from the date of this letter. Your written comments should be directed to: Triad Design Group, Attention Mr. Randall W. Maxey, 14313 North May Avenue, Oklahoma City, OK 73134. We sincerely request your cooperation in this matter and should you desire additional information, please contact Mr. Maxey by telephone at 405-752-2266 ext. 223 or by email at rmaxey@triaddesigngroup.com.

Sincerely,
Triad Design Group

R. W. Maxey

Randall W. Maxey
Director of Planning

rwm

attachment



DEPARTMENT OF ARMY
CORPS OF ENGINEERS, TULSA DISTRICT
1645 SOUTH 101ST EAST AVENUE
TULSA, OKLAHOMA 74128-4609

November 24, 2004

Planning, Environmental, and Regulatory Division
Planning Branch



Mr. Randall W. Maxey
Triad Design Group
14313 North May Avenue
Oklahoma City, OK 73134

Dear Mr. Maxey:

This is in response to your November 2, 2004, letter requesting flood plain comments for the proposed construction of a 24" waterline to be located in Yukon, Oklahoma, Oklahoma County, Oklahoma.

Most of the proposed waterline will lie in Unshaded Zone X. However, it will cross Mustang Creek and all three of its tributaries in several places. The actual underground pipeline would have no adverse effect on the flood plains. However, if there are any other activities, such as temporary fill, this must be done in a manner that would not adversely effect flooding. All of this project should be completed so that there is no significant increase in flood hazard and must comply with all local, State, and Federal flood plain ordinances.

If you have questions, please call me at 918-669-7197.

Sincerely,

Joseph R. Remondini, P.E., CFM
Project Manager
Flood Plain management Services



United States Department of the Interior
BUREAU OF INDIAN AFFAIRS
Eastern Oklahoma Regional Office
P.O. Box 8002
Muskogee, OK 74402-8002

IN REPLY REFER TO:

Division of Environmental,
Safety and Cultural Resources



NOV 12 2004

Mr. Randall W. Maxey
Triad Design Group
14313 North May Avenue
Oklahoma City, Oklahoma 73134

Dear Mr. Maxey:

On November 8, 2004, the Bureau of Indian Affairs, Eastern Oklahoma Regional Office (EORO), received a public notice from the Triad Design Group soliciting comments for the construction of a 24" Transmission Waterline Project in Oklahoma and Canadian Counties, Oklahoma. The EORO has no comments.

For your information, the project lies within the jurisdictional area of the Southern Plains Regional Office (SPRO). It is recommended that the Triad Design Group coordinate directly with the SPRO on any of its concerns. The contact person and address for the SPRO is as follows:

Mr. Michael Smith, Regional Director
Southern Plains Regional Office
P.O. Box 368
Anadarko, Oklahoma 73005-0368

If additional information is needed, please contact Mr. Bobby Coleman, Acting Division Chief, Division of Environmental, Safety and Cultural Resources, EORO, at (918) 781-4642.

Respectfully,

Regional Director



IN REPLY REFER TO:

Natural Resources

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS

Southern Plains Regional Office

P.O. Box 368

Anadarko, Oklahoma 73005

NOV 15 2004

Randall W. Maxey
Triad Design Group
14313 Noth May Avenue
Oklahoma City, Oklahoma 73134

Dear Mr. Maxey:

Thank you for the opportunity to review the proposed installation of a 24-inch transmission water line for Yukon, Oklahoma. I understand that you are asking for any comments we might have relative to the social, economic or environmental effects of the project.

Since the project lies outside the geographic boundaries of our jurisdiction, we have no specific comments or concerns that need to be addressed as you plan the project. However, we do appreciate your efforts in soliciting our comments and would like to be given the opportunity for input on future projects.

Please feel free to contact my office or my staff at 405/247-6673 if I may be of further service.

Sincerely,

Regional Director

Acting



STATE OF OKLAHOMA
WATER RESOURCES BOARD
www.owrb.state.ok.us



November 5, 2004

Randall W. Maxey
Triad Design Group
14313 N. May Avenue
Oklahoma City, OK 73134

Subject: 24-inch Transmission Waterline Project; Yukon, OK.

Dear Mr. Maxey:

The City of Yukon participates in the National Flood Insurance Program and administers a flood damage prevention ordinance. Any new development in the incorporated limits of this community must go through the floodplain administrator. Please contact Ms. Anna Waggoner, CFM, at PO Box 850500, Yukon, OK 73085 or by calling her at (405) 354-6676 and inform her of this proposed development.

Also, if any section of this waterline project will cross a flood hazard area on state owned or operated property; a floodplain development permit would be required from the Oklahoma Water Resources Board. You can find the regulations for state owned and operated property and a floodplain development permit application on the OWRB's web site at www.owrb.state.ok.us

If you have any questions, please give Mr. Ken Morris, CFM, a call at (405) 530-8800.

Sincerely,

Michael E. Mathis, Chief
Planning & Management

cc: Anna Waggoner, Yukon
Jack Graham, FEMA

Appendix - B

Section 404 Permit

DEPARTMENT OF THE ARMY REGULATORY PROGRAM DETERMINATION

Date: August 17, 2006

Dear MR. RANDALL W. MAXEY, DIRECTOR OF PLANNING, TRIAD DESIGN GROUP:

Please reference your latest letter dated August 9, 2006, regarding proposed work by the City of Yukon, Oklahoma. The work as described involves construction of large diameter water transmission lines and associated infrastructure elements.

The provided information does not indicate that a placement of dredged or fill material will be required, permanently or temporarily, into any "waters of the United States," including jurisdictional wetlands. Therefore, your proposal is not subject to regulation pursuant to Section 404 of the Clean Water Act, and a Department of the Army (DA) permit will not be required at this time. However, should your method of construction or operation necessitate any discharge into or any interference with any "blue"- or "purple"-lined waterway shown on U.S.G.S. topographic maps or any interference with any wetland as shown on U. S. Fish and Wildlife wetland maps, we require that you resubmit that portion of your project so that we may determine whether an individual DA permit will be required.

Although DA authorization is not required at this time, this does not preclude the possibility that other Federal, State, or local permits may be required.

If you have any questions about the Section 404 permit program, please telephone Mr. Timothy Hartsfield at 918-669-7237.

Sincerely,

T. HARTSFIELD

for

David Manning
Chief, Regulatory Office

Edition Date: 9 February 2004



August 9th, 2006

Mr. David Manning
Regulatory Branch Chief
Tulsa District Corps of Engineers
Environmental Analysis Section
1645 South 101 East Avenue
Tulsa, OK 74128-4609

Re: 24" Transmission Waterline Project; Yukon, Oklahoma.
Regulatory Branch Tracking Identification Number 14165

Dear:

Triad Design Group, acting as agent for the City of Yukon, Oklahoma in cooperation with the United States Army Corps of Engineers, is requesting a Nation Wide Permit (NWP-12) for the above referenced project in Oklahoma and Canadian Counties, Oklahoma (see attached map). This project is in the early stages of development and we are currently working with Mr. Jerry Sturdy on our Environmental Assessment (EA). Per Mr. Sturdy's comments on our draft EA we are to include the permit within the EA.

It is within the scope of the proposed project to complete the following:

- Construction of a 24" Water Transmission Pipeline approximately 5.5 in length located on the south side of Southwest 29th Street from approximately one half mile east of Council Road in Oklahoma City west to Czech Hall Road in Yukon, Oklahoma.
- Construction of a 24" Water Transmission Pipeline approximately 3 miles in length on the west side of Czech Hall Road from Southwest 29th Street to Northwest 10th Street in Yukon, Oklahoma.
- Construction of an above ground water storage tank facility on a piece of property measuring 500' x 500' located approximately .5 miles east of Council Road on the south side of Southwest 29th Street in Oklahoma City, Oklahoma.
- Possible construction of an above ground water storage tank facility on a piece of property measuring 500' x 500' located approximately .25 miles south of State Highway 66 on the east side of Frisco Road in Yukon, Oklahoma.

Per your letter dated November 18th, 2004 the following is presented:

Detail Narrative:

All Waters of the United States of America (WOUS) for this project will not be impacted by this project. All WOUS will be horizontally bored. The 24 inch waterline will be installed in a 33 inch steel casing. The 33 inch steel casing will be horizontally bored a minimum depth of 4 feet from the bottom the tributary to the top of the 33 inch steel casing (4 feet minimum cover). The bore length will be equal to top of bank to top of bank plus a minimum of 15 feet from each side of top of bank. We have identified 12 crossing of the WOUS, which are shown on the attached Location Map.

Latitudinal and Longitudinal Coordinates:

Reference the attached Location Map for identification marking.

<u>Identification Marking</u>	<u>Latitudinal Coordinate</u>	<u>Longitudinal Coordinate</u>
1	35° 28' 28" N	97° 44' 33" W
2	35° 28' 12" N	97° 44' 33" W
3	35° 27' 27" N	97° 44' 33" W
4	35° 27' 14" N	97° 44' 33" W
5	35° 26' 42" N	97° 44' 33" W
6	35° 26' 06" N	97° 44' 04" W
7	35° 26' 06" N	97° 42' 39" W
8	35° 26' 06" N	97° 41' 36" W
9	35° 26' 06" N	97° 40' 52" W
10	35° 26' 06" N	97° 40' 18" W
11	35° 26' 06" N	97° 39' 42" W
12	35° 26' 06" N	97° 39' 21" W

Ordinary High Water Mark

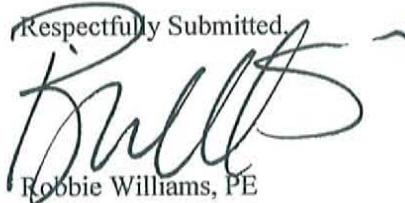
Since we are horizontally boring all WOUS there is not any work occurring below the ordinary high water mark and the bottom of the tributaries.

Detailed Route of Proposed Facility

Attached is a Location Map showing the location of the proposed waterline and crossings of the WOUS. We have provided coordinates at the beginning and end of project as well as the one point of change in direction.

We appreciate your attention to our project. Should you need to contact me please call 405-752-1122 or email at rwilliams@triaddesigngroup.com.

Respectfully Submitted,



Robbie Williams, PE

rdw:rdw

c: Bill Smith, USCE
Jerry Sturdy, USCE
Timothy Hartsfield, USCE
E126.11

Attachment: Location Map
USCE November 18th, 2004 Letter

ESTIMATED SUMMARY OF QUANTITIES

Item Number	Description	Unit	Quantity
1	24" Gate Valve & Box	EA.	2.1
2	24" Tapping Valve & Box	EA.	44.0031
3	24" Waterline	L.F.	45.1
4	24" x 45' Bands	EA.	7.1
5	24" x 25' Tapping Sleeve	EA.	2.2001
6	24" Air Valve	EA.	1.7001
7	24" x 35" Steel Casing	S.Y.	4.4051
8	24" x 35" Steel Casing	S.Y.	4.4051
9	Remove and Reset Fence	ACRES	25.0001
10	Seeding	S.Y.	2.2001
11	Solid Slab Sodding	L.F.	1.1
12	Trench Stabilization	LCUM	1.1
13	Construction Staking	LCUM	1.1
14	Erosion Control	LCUM	1.1
15	Waterline Disinfection and Testing	LCUM	1.1
16	Waterline Disinfection and Testing	LCUM	1.1

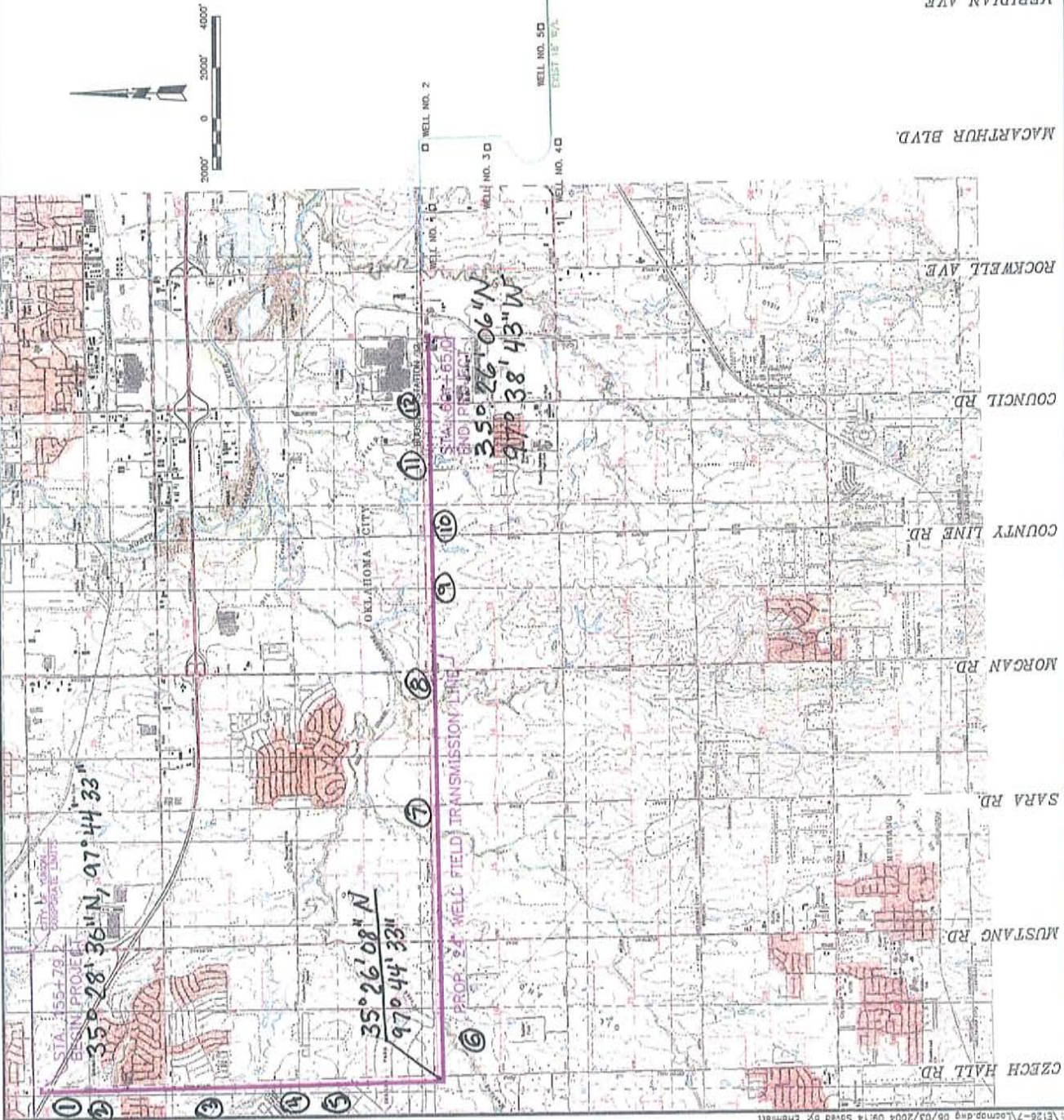
Pay Item Notes
(1) Bore and Casing Only

S.W. 29th ST.

S.W. 44th ST.

S.W. 59th ST.

S.W. 74th ST.



DATE	03/05/04	CITY OF YUKON
DESIGN BY	BRAND ETC.	WELL FIELD TRANSMISSION SYSTEM
SCALE	AS SHOWN	LOCATION MAP
SHEET	P13-2	TRIAD DESIGN GROUP



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, TULSA DISTRICT
1645 SOUTH 101ST EAST AVENUE
TULSA, OKLAHOMA 74128-4609

November 18, 2004

Planning, Environmental, and Regulatory Division
Regulatory Branch



Mr. Randall W. Maxey
Director of Planning
Triad Design Group
14313 North May Avenue
Oklahoma City, OK 73134

Dear Mr. Maxey:

This letter is in reference to your letter dated November 2, 2004, requesting comments pertaining to a proposed 24-inch transmission waterline project for the City of Yukon, Oklahoma. The proposal as described is a candidate for authorization under Nationwide Permit for Utility Lines (NWP-12). However, complete information necessary to process this request has not been provided.

Based on information provided to this point the proposal has the potential to impact more than 1/10 acre of "Waters of the United States" (WOUS) at more than one location.

If you wish to pursue processing under NWP-12, the information required in the enclosed General Condition 13 must be submitted to this office. In particular, for any discharge into, impact to, or any interference with a WOUS, you must include a delineation of the WOUS and a compensatory mitigation plan to offset permanent losses of WOUS. Wetlands must be identified according to the U.S. Army Corps of Engineers 1987 Wetlands Delineation Manual. Mitigation plans should be designed to ensure losses result in minimal adverse effects to the aquatic environment of WOUS. You must also include a statement describing how temporary impacts will be minimized to the greatest practicable extent.

We will continue processing of the request when all required information is received as required by General Condition 13. If the terms and conditions of the NWP-12 cannot be complied with, it may be necessary to initiate the application process for a Standard Individual Department of the Army Permit.

The following information is required to continue processing of this request for a Department of the Army permit.

° A detailed narrative stating in clear and concise language the method to be used when installing each individual crossing of any WOUS, e.g., trench, horizontal boring, elevated. A WOUS is typically defined as being any watercourse shown on an official USGS 7.5-minute Quadrangle topographic map as any type or style of 'blue' (in some instances, 'purple') colored line.

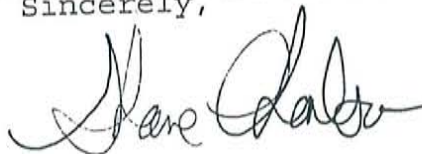
° A tabular presentation providing latitudinal and longitudinal coordinates of each and every crossing of any 'blue line' WOUS and the method of crossing.

° A precisely calculated areal extent of any and all work occurring below Ordinary High Water Mark (OHWM) at each and every 'blue line' crossing of a WOUS. OHWM may be correlated to the local hydraulic flow Q2 value for the waterbody in question.

° A detailed and finalized route of the proposed utility line including all portions and appurtenances. The route will be absolutely pinpointed using latitudinal and longitudinal coordinates equally spaced, at endpoints, and at every change of direction. Later variances may require additional permitting actions and will create delays.

Please refer to Regulatory Branch Tracking Identification Number 14165 in all future correspondence. If further assistance is required, please contact Mr. Timothy Hartsfield at 918-669-7237.

Sincerely,

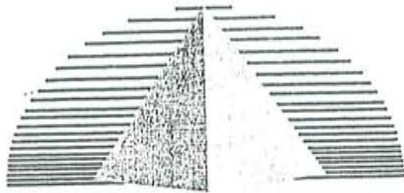


David Manning
Chief, Regulatory Branch

Enclosure

Appendix - C

Fish and Wildlife Coordination



TRIAD DESIGN GROUP

November 2, 2004

NOV - 5 2004

Mr. Jerry Brabander
Field Supervisor (ES)
U.S. Fish and Wildlife Service
Attn: Mr. Ken Frazier
222 South Houston, Suite A
Tulsa, OK 74127

Re: 24" Transmission Waterline Project; Yukon, Oklahoma.

Dear Mr. Brabander:

Per Randall Maxey, USACE involvement is not merely fact, but consists of partial funding under joint agreement. Contacts are Bill Smith & Jerry Sturdy 669-7487

Triad Design Group, acting as agent for the City of Yukon, Oklahoma in cooperation with the United States Army Corps of Engineers, is soliciting comments on the above referenced project in Oklahoma and Canadian Counties, Oklahoma (see attached map). This project is in the early stages of development and any comments relative to the social, economic, or environmental effect of this proposal will be appreciated. The pipeline corridor study area is 65 feet wide, extending from the section line. Additional right-of-way will be required.

BMPs will be used at creek crossings

It is within the scope of the proposed project to complete the following:

- Construction of a 24" Water Transmission Pipeline approximately 5.5 ^{miles} in length located on the south side of Southwest 29th Street from approximately one half mile east of Council Road in Oklahoma City west to Czech Hall Road in Yukon, Oklahoma.
- Construction of a 24" Water Transmission Pipeline approximately 3 miles in length on the west side of Czech Hall Road from Southwest 29th Street to Northwest 10th Street in Yukon, Oklahoma.
- Construction of an above ground water storage tank facility on a piece of property measuring 500' x 500' located approximately .5 miles east of Council Road on the south side of Southwest 29th Street in Oklahoma City, Oklahoma.
- Possible construction of an above ground water storage tank facility on a piece of property measuring 500' x 500' located approximately .25 miles south of State Highway 66 on the east side of Frisco Road in Yukon, Oklahoma. *This portion of project does include a pipeline component as indicated on map; pipeline is 82.4 miles would be similar to that proposed elsewhere (24" or 20"); would tie into existing system, per Randall Maxey*

To allow adequate time for evaluation of your suggestions, we would appreciate receiving your comments within 15 days from the date of this letter. Your written comments should be directed to: Triad Design Group, Attention Mr. Randall W. Maxey, 14313 North May Avenue, Oklahoma City, OK 73134. We sincerely request your cooperation in this matter and should you desire additional information, please contact Mr. Maxey by telephone at 405-752-2266 ext. 223 or by email at rmaxey@triaddesigngroup.com.

Sincerely,
Triad Design Group

Per Bill Smith, CE, project is being done under authority of S. 219, WRDA. That program provides for federal cost share of municipal environmental infrastructure. In this case \$5 million, 75:25 fed-local cost share. Corps will administer funds, city will do design work.

R. W. Maxey

Randall W. Maxey
Director of Planning

rwm

attachment

NO OBJECTION POSITION	
The U.S. Fish and Wildlife Service identifies no objections to implementation of the described action.	
Date:	<u>2 December 2004</u>
Consultation #:	<u>02-14-05-T-0046</u>
Approved by:	<u>David Martinez</u>
U.S. FISH and WILDLIFE SERVICE, TULSA, OK	
ARCHITECTURE	ENGINEERING
	PLANNING

ARCHITECTURE

ENGINEERING

PLANNING

WILDLIFE CONSERVATION COMMISSION

Bruce Mabrey
CHAIRMAN
Bill Phelps
VICE CHAIRMAN
John D. Groendyke
SECRETARY
Mac Maguire
MEMBER

John S. "Jack" Zink
MEMBER
Harland Stonecipher
MEMBER
Lewis Stiles
MEMBER
Wade Brinkman
MEMBER



BRAD HENRY, GOVERNOR

GREG D. DUFFY, DIRECTOR

1801 N. Lincoln

P.O. Box 53465

Oklahoma City, OK 73152

PH. 521-3851

December 15, 2004

Mr. Randall W. Maxey
Triad Design Group
14313 N. May Ave.
Oklahoma City, OK 73134



RE: 24" Transmission Waterline Project; Yukon, Oklahoma

Dear Mr. Maxey,

This responds to your letter of November 2, 2004 requesting comments on water system improvements for the city of Yukon. The proposed project will include construction of two 24" water transmission pipeline approximately 5.5 and 3 miles in length, construction of an above ground water storage tank facility on a piece of property measuring 500' x 500, and the possible construction of an above ground water storage tank facility on a piece of property measuring 5000 x 500'.

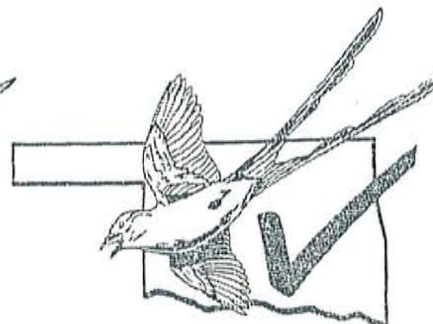
We have reviewed the information sent to this office regarding the proposed project and have compared this against our current records for endangered and threatened species. We have concluded that this project should not have a significant impact on state listed endangered or threatened wildlife species, local fish and wildlife resources. Likewise, we did not find evidence that waterbodies will be encountered and thus, negatively impacted as a result of the proposed project.

To mitigate for habitat disturbances caused from this project, we recommend that revegetation of native plant species occur on water line right of ways and bare soil upon completion of construction of the water treatment plant. We understand that much of this project is planned within city limits and therefore, right of ways may be concreted or revegetation may not provide suitable habitat for wildlife resources. In these cases, it is best to avoid and minimize damages to habitat, especially streams.

We appreciate the opportunity to review and provide comments on this project. If we can be of further assistance, please contact our Natural Resources Section at 405-521-4663.

Sincerely,

Ferrella March
Natural Resources Biologist



Search for the Scissortail
on Your State Tax Form

Appendix - D

Cultural Resources Coordination



Oklahoma Archeological Survey

THE UNIVERSITY OF OKLAHOMA

March 28, 2003

Stephen Nolan
US Army Corps of Engineers
1645 S. 101 East Ave.
Tulsa, Oklahoma 74128-4609

RE: Proposed revised elevated water storage tank, City of Yukon. Legal Description: E ½ NE ¼ Section 24 T12N R6W, Canadian County, Oklahoma.

Dear Mr. Nolan:

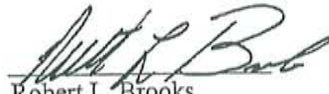
A cultural resources report of investigations has been received by this agency on the above referenced project. This agency confirms the recommendations contained in the report. The review was conducted in cooperation with the State Historic Preservation Office, Oklahoma Historical Society.

Please contact this office at (405) 325-7211 if buried archaeological materials such as chipped stone tools, pottery, bone, historic crockery, glass, metal items, or building materials are exposed during construction activities.

In addition to our comment on the cultural resource inventory conducted for this project, under 36CFR Part 800.3 you are reminded of your responsibility to consult with the appropriate Native American tribe/groups for any concerns they may have pertaining to this report.

Sincerely,

Staff Archeologist


Robert L. Brooks
State Archaeologist

:ls

cc: SHPO
Chris Cojeen
Cheyenne & Arapaho Tribes
Wichita & Affiliated Tribes



Oklahoma Archeological Survey

THE UNIVERSITY OF OKLAHOMA



November 5, 2004

Randall Maxey
Triad Design Group
14313 N. May Avenue
Oklahoma City, OK 73134


Re: Triad Design Group/City of Yukon proposed upgrade of waterline transmission system (over 12 miles) including 2 proposed storage tanks. Legal Descriptions: Parts of (section lines) Section 19, T12N R6/5W; Section 32/33 T12N R5W; Sections 5/4, 8/9/16, 10/15, 11/14, 12/13, T11N R5W; Section lines 7/18 and W ½ Section line 8/17, Canadian and Oklahoma Counties.

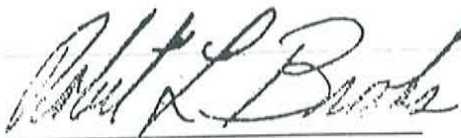
Dear Mr. Maxey:

The Community Assistance Program staff of the Oklahoma State Archeological Survey has reviewed the above referenced project, in order to identify areas that may potentially contain prehistoric or historic archeological materials (historic properties). The location of your project has been crosschecked with the state site files containing approximately 18,000 archaeological sites which are currently recorded for the state of Oklahoma. **No sites are listed in your project area, but based on the topographic and hydrologic setting of your project, archeological materials are likely to be encountered. An archaeological field inspection is considered necessary prior to project construction in order to identify significant archaeological resources that may exist in the project area.** Please contact this office at (405) 325-7211 if you require additional information on this project.

This environmental review and evaluation is performed in order to locate, record, and preserve Oklahoma's prehistoric and historic cultural heritage in cooperation with the State Historic Preservation Office, Oklahoma Historical Society. If you have not done so, you should also be simultaneously submitting this application to their office. In addition to these review comments, under 36CFR Part 800.3 you are reminded of your responsibility to consult with the appropriate Native American tribe/groups to identify any concerns they may have pertaining to this undertaking and potential impacts to properties of traditional and/or ceremonial value. Thank you for your cooperation.

Sincerely,


Luther Leith
Staff Archaeologist


Robert L. Brooks
State Archaeologist

:ab

cc: SHPO



Oklahoma Historical Society

Founded May 27, 1893

State Historic Preservation Office • 2704 Villa Prom • Shepherd Mall • Oklahoma City, OK 73107-2441
Telephone 405/521-6249 • Fax 405/947-2918

November 18, 2004

Mr. Randall Maxey
Triad Design Group
14313 N. May Ave.
Oklahoma City, OK 73134



RE: File #0190-05; Yukon Water Transmission Pipeline & Storage Tank Project

Dear Mr. Maxey:

We have received and reviewed the documentation submitted on the referenced project in Canadian and Oklahoma Counties. Additionally, we have examined the information contained in the Oklahoma Landmarks Inventory (OLI) files and other materials on historic resources available in our office. We find that there are no known historic properties affected within the referenced project's area of potential effect.

In addition to our review, you must contact the Oklahoma Archeological Survey (OAS), 111 E. Chesapeake, #102, Norman OK 73019-5111 (#405/325-7211, FAX #405/325-7604), to obtain a determination about the presence of prehistoric resources that may be eligible for the National Register of Historic Places. Should the OAS conclude that there are no prehistoric archeological sites or other types of "historic properties," as defined in 36 CFR Part 800.16(1), which are eligible for inclusion in the National Register of Historic Places within the project area and that such sites are unlikely to occur, we concur with that opinion.

The OAS may conclude that an on-site investigation of all or part of the project impact area is necessary to determine the presence of archeological resources. In the event that such an investigation reveals the presence of prehistoric archeological sites, we will defer to the judgment of the OAS concerning whether or not any of the resources should be considered "historic properties" under the Section 106 review process. If sites dating from the historic period are identified during the survey or are encountered during implementation of the project, additional assessments by the State Historic Preservation Office will be necessary.

Should further correspondence pertaining to this project be necessary, the above underlined file number must be referenced. If you have any questions, please contact Charles Wallis, RPA, Historical Archeologist, at 405/521-6381. Thank you.

Sincerely,

Melvena Heisch
Deputy State Historic
Preservation Officer

MH:bh



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, TULSA DISTRICT
1645 SOUTH 101ST EAST AVENUE
TULSA, OKLAHOMA 74128-4609

March 14, 2005

Planning, Environmental, and Regulatory Division
Environmental Analysis and Compliance Branch

Dr. Bob Blackburn
State Historic Preservation Officer
Oklahoma Historical Society
2704 Villa Prom, Shepherd Mall
Oklahoma City, OK 73107

Dear Dr. Blackburn:

This letter is to initiate Section 106 consultation for an undertaking sponsored by the City of Yukon, Oklahoma and conducted in cooperation with the U.S. Army Corps of Engineers, Tulsa District. The undertaking consists of a series of waterline upgrades in Canadian and Oklahoma counties, for the City of Yukon. As required under Section 106, the City conducted archaeological investigations of the area of potential effect (see two enclosed reports) as required under Section 106 of the National Historic Preservation Act of 1966 (as amended).

Archaeological investigations were conducted by Cojeen Archaeological Services, and are detailed in the enclosed reports "Report on the Cultural Resources Inventory of the USACE and City of Yukon Waterline Project Located in Yukon, Canadian and Oklahoma Counties, Oklahoma," and "Report on the Cultural Resources Inventory of A Revised Proposed Elevated Water Storage Tank Location of the USACE and City of Yukon Waterline Project Located in Yukon, Canadian County, Oklahoma." During the investigations, two historic archaeological sites, 34CN149 and 34CN150, were identified. In addition, one National Register-listed historic structure, Czech Hall, was determined to be in close proximity to the waterline right-of-way.

We agree with the author's recommendations that 34CN149 and 34CN150 are not eligible for listing on the National Register and that Czech Hall will not be impacted by the proposed waterline upgrades. We request your comment on the adequacy of the report and our finding of "no historic properties affected" for this project. If you have any questions, please contact Mr. Ken Shingleton at 918-669-7661.

Sincerely,

Stephen L. Nolen
Chief, Environmental Analysis
and Compliance Branch

Enclosures



Oklahoma Archeological Survey

THE UNIVERSITY OF OKLAHOMA

March 21, 2005

Stephen L. Nolen
Chief, Environmental Analysis
and Compliance Branch
Department of the Army
Corps of Engineers, Tulsa District
1645 South 101st East Avenue
Tulsa, OK 74128-4609

Re: Proposed waterline system improvements, City of Yukon. Legal Description:
Segment 1 – West edge Section 33 T12N R5W; West edge Sections 4 & 9,
North edge Sections 13-16 T11N R5W; North edge Section 17-18 T11N R4W;
Segment 2 – North edge, West edge, and SW ¼ Section 19 T12N R5W, Canadian
and Oklahoma Counties, Oklahoma.

Dear Mr. Nolen:

I have received a report documenting the results of a cultural resource inventory for the above referenced action. This work was accomplished by Mr. Christopher Cojeen and associates on November 6-7, 2004. The field inspection of some 98 acres representing the area of potential effect resulted in the documentation of two historic farmsteads represented as archaeological sites (34CN149 and 34CN150) as well as National Register listed Czech Hall. **I defer comment on the potential eligibility of 34CN149 & 34CN150 and project effect to the Historic Preservation Office. I also defer opinion on the potential effect to Czech Hall to the Preservation Office.**

This review has been conducted in cooperation with the State Historic Preservation Office, Oklahoma Historical Society.

Sincerely,

Robert L. Brooks
State Archaeologist

Cc: SHPO

C. Cojeen
Wichita and Affiliated Tribes
Cheyenne and Arapaho Tribes



Oklahoma Historical Society

Founded May 27, 1893

State Historic Preservation Office • 2704 Villa Prom • Shepherd Mall • Oklahoma City, OK 73107-2441
Telephone 405/521-6249 • Fax 405/947-2918

April 13, 2005

Mr. Stephen Nolen, Chief
Environmental Analysis & Compliance
Tulsa Dist. Corps of Engineers
1645 South 101st East Avenue
Tulsa, OK 74128-4609

RE: File 1025-05; Yukon Waterline Project in Canadian and Oklahoma Counties,
Oklahoma

Dear Mr. Nolen:

We have reviewed the documentation submitted on the referenced project. We concur with your opinion that Historic Period archeological sites 34CN149 and 34CN150 are not eligible for the National Register of Historic Places.

We do not concur with your opinion that the project will have no effect on Czech Hall, a property individually listed in the National Register of Historic Places. We find that the project will have no adverse effect on the property provided the following conditions are met.

CONDITIONS:

1. The yard and road are restored to their current condition after laying of the water line.
2. The sidewalk paralleling and just within the right-of-way is avoided.

If these conditions are met, then we are in agreement that no historic properties will be adversely affected.

If these conditions are acceptable to you, please return this document with the signature as indicated, confirming your acceptance.

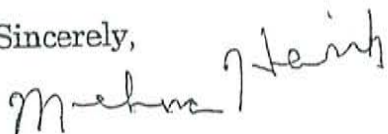
When we receive the document cited above, your agency will have completed the Section 106 process as outlined in the Advisory Council on Historic Preservation's revised regulations, 36 CFR Part 800, which went into effect January 11, 2001, and specifically 36 CFR Part 800.5(b) which addresses conditions imposed by the SHPO to achieve a "no adverse effect" determination. You are no longer required to provide documentation of "no adverse" effect findings to the Council.

Mr. Nolen
April 13, 2005
Page 2

RE: File 1025-05; Yukon Waterline Project in Canadian and Oklahoma Counties,
Oklahoma

Thank you for the opportunity to review this project. If you have any questions, please do not hesitate to call Charles Wallis, RPA, Historical Archaeologist, at 405/521-6381.

Sincerely,



Melvena Heisch
Deputy State Historic
Preservation Officer

MH:pm

I hereby accept the conditions stated in this letter.

Signature



Date

4/22/05

YUKON

April 21, 2005

Mr. Stephen Nolen, Chief
Environmental Analysis & Compliance
United States Army Corps of Engineers
Tulsa District
1645 S 101st East Avenue
Tulsa, OK 74128-4609

Re: Response to the State Historic Preservation Office request for the Yukon Waterline Project;
Czech Hall Historic Property.

Dear Mr. Nolen,

The City of Yukon respectfully accepts the conditions set forth by the State Historic Preservation Office regarding the above referenced project in their letter to your office dated April 13, 2005. Together with the design engineers, Triad Design Group, they City will adhere to these conditions in order to cause no adverse effect to the subject property.

Thank you for your consideration on this matter.

Sincerely,
City of Yukon



Jim Crosby
City Manager

rwm

cc: File E126.11
Ken Shingleton, USACE
Robbie Williams, P.E., Triad Design Group

CITY OF YUKON

500 West Main Street
P. O. Box 850500
Yukon, Oklahoma 73085
Phone: (405) 354-1895
Fax: (405) 354-4357

Christopher A. Cojeen
Principal Investigator

Archaeology
Research
History

**REPORT ON THE CULTURAL RESOURCES INVENTORY OF
THE USACE AND CITY OF YUKON WATERLINE PROJECT
LOCATED IN YUKON, CANADIAN AND OKLAHOMA COUNTIES, OKLAHOMA**

Project Name: USACE and City of Yukon Waterline Project located in Yukon,
Canadian and Oklahoma Counties, Oklahoma
Prepared For: Triad Design Group

Project Location: Portions of Canadian Oklahoma
Map Reference: Mustang (1986), Richland (1990) and Minco NE (1990) Oklahoma
7.5 minute USGS quadrangles

Records Search: Christopher Cojeen and Thomas Lindsey, 10/18/2003
Survey: Christopher Cojeen, Amy Cojeen, Michael Jaques,
Roger J. Burkhalter, and David Boling, 11/6-7/2004
Report by: Roger Burkhalter and Christopher Cojeen, 11/26/2004

ABSTRACT

A Cultural Resources inventory of the City of Yukon in cooperation with the United States Army Corps of Engineers (USACE) Yukon Waterline Project was performed November 6 and 7, 2004, by Cojeen Archeological Services (CAS), of Norman, Oklahoma. Triad Design Group contracted this work for submission to the USACE and the City of Yukon. The inventory included background file searches at the Oklahoma Archeological Survey (OAS) and pedestrian field survey and limited shovel probes in the proposed right-of-way (r/w) route in portions of Canadian and Oklahoma counties, Oklahoma. No previously recorded archeological sites were identified as being in the study area. One National Register of Historic Places (NRHP) listed property is within the project corridor.

The proposed Yukon Waterline Project is in two segments (Figure 1). Segment 1 begins at an existing City of Yukon water facility on the south side of Southwest 29th Street about one half mile (0.8 kilometers [km]) east of Council Road and extends west approximately 5.5 miles (8.85 km) to the west side of Czech Hall Road, then north about 3 miles (4.8 km) to Northwest 10th Street in Yukon, Oklahoma. A new water tower facility will be located at the beginning of this segment. Segment 2 begins at the intersection of Northwest 23rd Street (Vandement Avenue) and Westport Boulevard and extends to the west and northwest along the north side of NW 23rd Street for about three-fourths mile (1.2 km) to the east side of Frisco Road then north about three-fourths mile (1.2 km) to the south side of West Main Street (US Highway 66) then east about 1 mile (1.6 km) to Cemetery Road. A new water tower facility will be located about one fourth mile south of West Main Street on the east side of Frisco Road. The proposed r/w corridor extends approximately 65 feet ([ft] 19.8 meters [m]) from the various roadway centerlines. Each proposed elevated water tower will be located in a 500 ft by 500 ft area. The inventory area includes approximately 98.1 acres. The r/w route was not staked prior to the archeological survey, however, the route followed an existing road route and CAS was provided with large scale recent aerial photographs and maps that aided in the location of the r/w corridor. The archeological survey consisted of a pedestrian coverage of the r/w corridor route. Two historic archeological sites and one National Register of Historic Places (NRHP) listed property were located within or adjacent the proposed pipeline r/w route.

1. INTRODUCTION

PROPOSED ACTION

The City of Yukon in cooperation with the United States Army Corps of Engineers (USACE) proposes to construct a new water transmission pipeline from the City of Yukon Well Field, including two elevated water storage tanks (Figure 1). The pipeline will be a 24-inch diameter ductile iron pipe with a polyethylene encasement, buried a minimum of 4 feet below grade. Two elevated water storage tanks are also proposed in this project. The pipeline is divided into two segments, one on the south and west side of Yukon and the remaining segment on the northwest side of Yukon. The proposed pipeline r/w will follow the existing roadways and utilities easements route along the entire project length. The proposed r/w corridor extends approximately 65 ft (19.8 m) on one side of existing roadway centerlines.

PROJECT LOCATION

The proposed Yukon Waterline Project is in two segments (Figure 1). The first segment begins at the existing City of Yukon water facility on the south side of Southwest 29th Street about one half mile (0.8 kilometers [km]) east of Council Road and extends west approximately 5.5 miles (8.85 km) to the west side of Czech Hall Road, then north about 3 miles (4.8 km) to Northwest 10th Street in Yukon, Oklahoma. A new water tower facility will be located at the beginning of this segment.

The second segment begins at the intersection of Northwest 23rd Street (Vandement Avenue) and Westport Boulevard and extends to the west and northwest along the north side of NW 23rd Street for about three-fourths mile (1.2 km) to the east side of Frisco Road then north about three-fourths mile (1.2 km) to the south side of West Main Street (US Highway 66) then east about 1 mile (1.6 km) to Cemetery Road. A new water tower facility will be located about one fourth mile south of West Main Street on the east side of Frisco Road.

The proposed r/w corridor extends approximately 65 feet ([ft] 19.8 meters [m]) from the various roadway centerlines. Each proposed elevated water tower will be located in a 500 ft by 500 ft area. The inventory area includes approximately 98.1 acres. The r/w route is located mostly in the uplands areas north of the Canadian River.

USGS MAP SOURCES

The project is on the Mustang (1986), Richland (1990) and Minco NE (1990), Oklahoma 7.5 minute USGS quadrangles.

LAND JURISDICTION

The project area is located on private unrestricted lands.

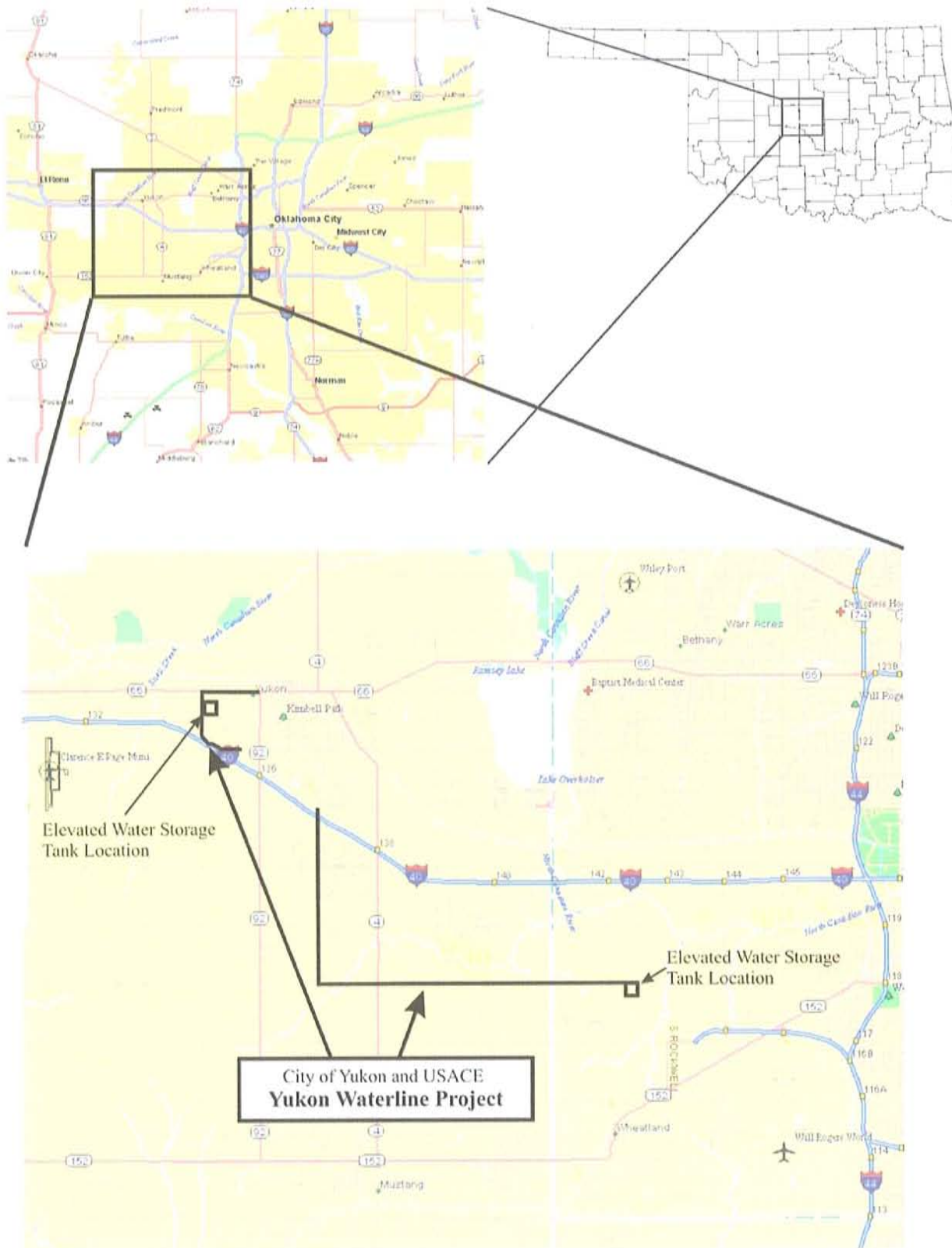


Figure 1. Project location.

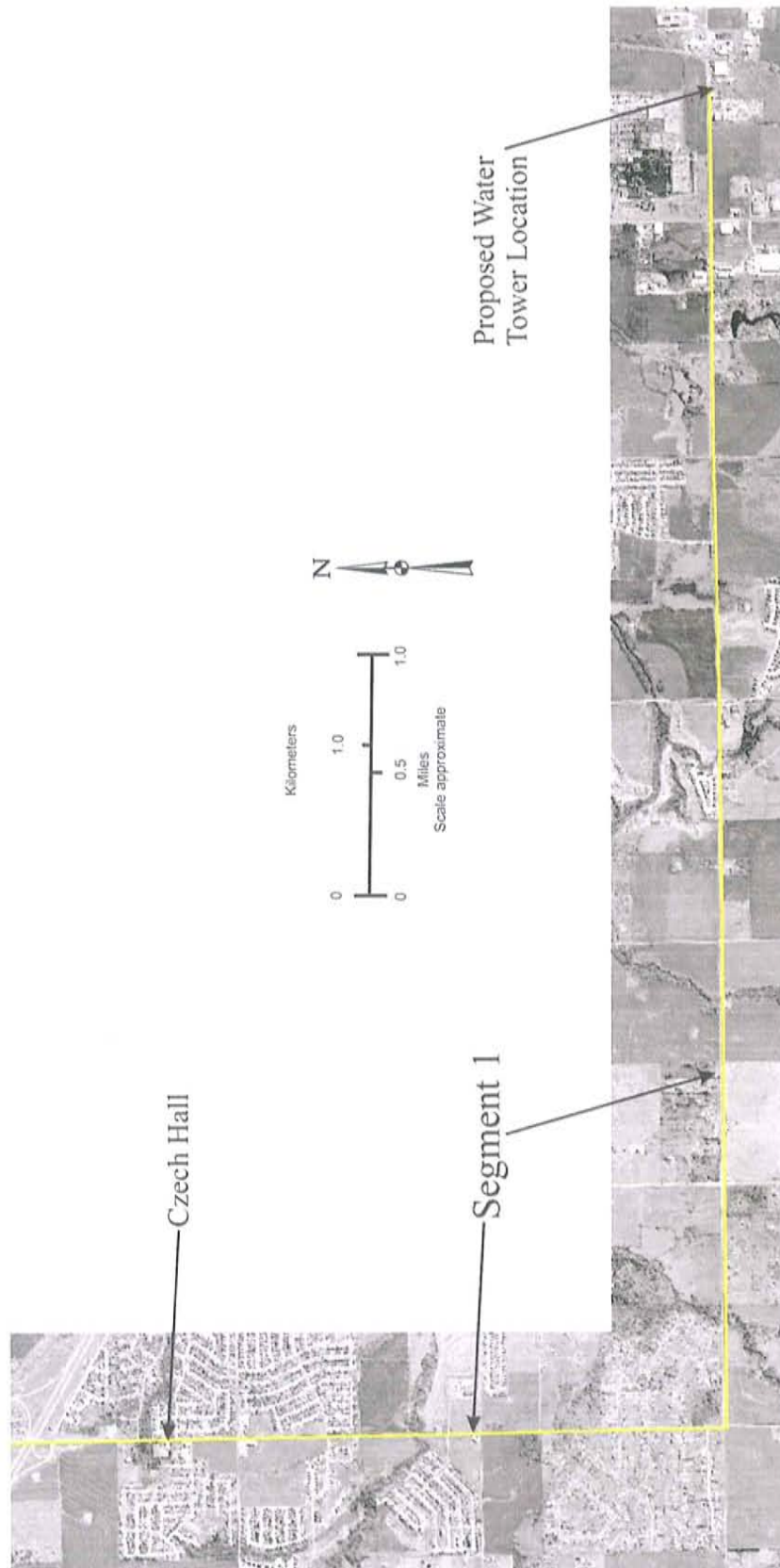


Figure 2. Aerial photograph (2002) of Segment 1.

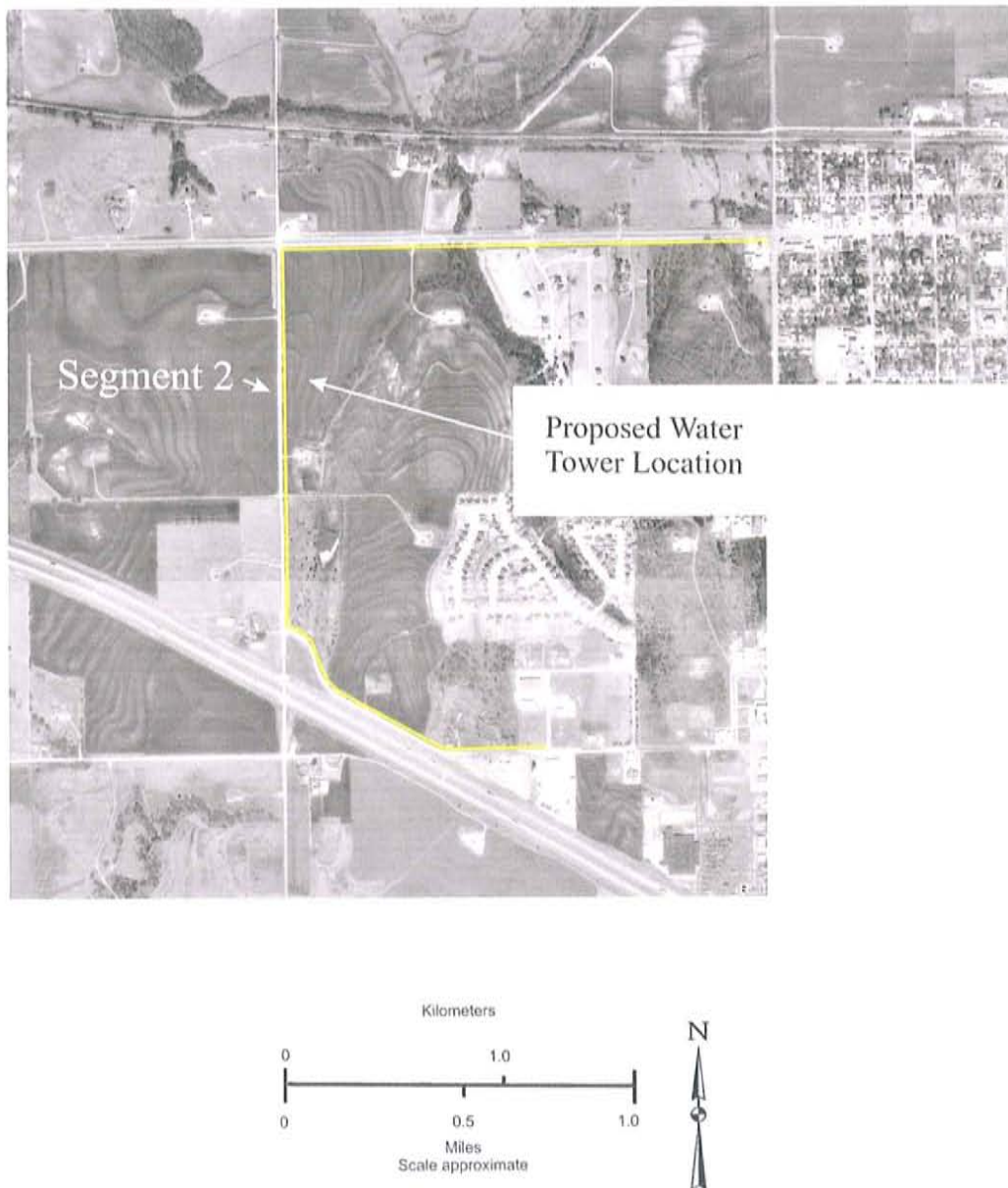


Figure 3. Aerial photograph (1995) of Segment 2.

2. NATURAL SETTING

GEOLOGY AND GEOMORPHOLOGY

The project lies within the Central Redbed Plains Geomorphic Province of the Great Plains province of the Interior Plains geomorphic division (Fenneman 1946) and the Mixed Grass Prairie Plains Vegetational Region (Risser ed. 1974).

Soils in the project area are derived mostly from local Permian bedrock material with some Quaternary and Recent fluvial deposits along nearby drainages. Soils are mostly sand, silt, and clay based and are shallow, reddish-orange in the upland areas and deep, reddish-brown colored soils in lowland areas.

CLIMATE AND HYDROLOGY

At present, the study area has a temperate, subhumid climate, typical of the central part of Oklahoma. Seasonal changes vary in intensity, but the changes between seasons are gradual. Summer is usually the wettest season. Average annual precipitation varies from 60 cm to 90 cm. Elevation in the project area varies from 1,240 to 1,380 ft (378 to 421 m) above sea level.

Current land use in the area consists primarily of residential, business and cultivated lands, with limited areas of pasturelands.

FLORA AND FAUNAL RESOURCES

The natural vegetation in the project area is associated with the Mixed Grass Prairie Plains, dominated by a combination of species found in the tall grass and short grass prairies, with the lower layer of grasses and forbs usually denser than the taller one. Low needle-leaf evergreen trees are scattered over the prairie, creating a savanna-like vegetation community. The dominant plants on the uplands are red cedar (*Juniperous virginiana*), big and little bluestem, sideoats grama, blue grama, and hairy grama (*Bouteloua hirsuta*). Small groves of low broadleaf deciduous trees and shrubs occur in valley bottoms and on north-facing slopes. The dominant species in these groves are hackberry (*Celtis occidentalis*), cottonwood, burr oak, plum (*Prunus* sp.), and coralberry (*Symphoricarpos orbiculus*).

The wooded areas in the bluestem-grama prairie have fewer arboreal species and smaller trees as compared to forested areas to the east. Cottonwoods, junipers (*Juniperus virginiana*), and burr oaks are widely spaced along streams and rivers, and very few herbs are present in the understory.

Shelford (1963) describes typical animal populations and their changes through relatively recent time. Historically, the major grazing animals in the area were bison and pronghorn. Major predators were the wolf, coyote, and kit fox. Woodlands along streams supported wapiti, deer, and cottontail. Additionally, there were many burrowing animals (prairie dogs, pocket mice, kangaroo rats, etc.) and their predators (badger, black-footed ferret, etc.). At the time of the survey, deer, rodent burrows, snakes, lizards, frogs, and several species of birds were the only obvious evidence of the local animals. A more comprehensive list is included in Hofman et al. (1989).

The majority of the survey route crossed developed residential and business areas with a short segments of pasture land that has vegetation consistent with the Mixed Grass Prairie Plains. Mixed hardwoods line area streams. Red cedar and Hackberry are common on uplands. Soils are mostly deep, dark brown to brown silty clay loams.

3. CULTURAL SETTING

INTRODUCTION

The proposed Yukon Waterline Project lies within the Southern Great Plains archeological province (Hofman et al. 1989), in the Central Plains habitat of Oklahoma. Numerous archeological projects and research have been conducted in the Central Great Plains area since the early 1900s (Hofman et al. 1989). The discussion below will be restricted primarily to research conducted in the project area and the immediate surrounding area of central Oklahoma.

PREFIELD INVESTIGATIONS AND RECORDS CHECK

CAS personnel contacted the OAS in October 2004 to review information on previously recorded cultural resources in the project vicinity. No previously recorded archeological sites are located within the proposed corridor. OAS records indicate three previously recorded sites are within one-half mile of the proposed project corridor. According to the most recent listings, there is one NRHP property within the project area:

Czech Hall, 2.2 miles South of Yukon, 11/25/80, A, 80003258.

The Czech Hall, also known as Bohemian Hall, was built in 1925 and added to in 1935, 1939, 1954 and 1957. It is an approximately 40 by 80 foot building with a raised stage area and was built to accommodate gymnasts. An older, original hall, built in 1901, stood just north of the present structure and was demolished in the mid-1920's with portions being used to build the current structure.

The building is currently in use as a gathering place for dances, divadlos and social events. It is a focus of the larger Czech and Bohemian community, extending beyond Yukon into portions of Oklahoma and other states with active central European roots.

This site is located adjacent the proposed Yukon Waterline Project corridor.

34CN43, Westbury site

This is an open habitation with a light to moderate concentration of lithic debris and faunal remains located in the Westbury Golf Course south of Mustang Creek. Larry Neal and Robert Everett recorded this site in 1977. Mr. Everett also wrote a short report on the site (Everett 1977). Reported from the site are a Castroville type dart point, a Gary type dart point, a quartzite mano, a uniface, a scraper and a limestone chipping/grinding platform. Flakes and other lithic debitage were noted to be rare at this site. Faunal remains include bison, mussel shell, and turtle.

34CN66, Custer-Mach site

This is a prehistoric "potentially preserved hamlet or village" (Wyckoff and Brooks 1983) site located on a terrace above the North Canadian River, recorded by Robert Everett in 1981. Diagnostic artifacts located during the time of site recording include Young, Washita, Scallorn and Fresno style projectile points, shell and bone tempered cordmarked pottery, faunal remains, lithic flakes and debris, cores, and worked bone.

34CN91

This is a multicomponent site with unassigned prehistoric and historic occupations recorded by Neel, Everett and Muse in 1985. It consists of a dense scatter of historic debris (and two prehistoric lithic debitage artifacts) located in a trailer park. Artifacts noted on the site form include bottle glass, ceramics, metal and a "Coffeyville" brick. Based on the artifactual remains and cartographic review, an age assignment of 1890 to 1929 was given.

34CN147, Svejkovsky Homestead

This is a historic farmhouse (extant) built originally in 1898 by Frank Svejkovsky. The farmstead associated with the house originally included several outbuildings that have been razed or destroyed by subsequent settlement in the area. No artifacts other than the extensively remodeled house remain. This site was recorded by Briscoe in 2002.

The above listed archeological sites are located outside of the project corridor and will not be impacted by this project.

PREVIOUS ARCHEOLOGICAL RESEARCH

Recent research in the project vicinity of Canadian and Oklahoma counties has focused on oil and gas exploration and production, transportation modifications and development, and wastewater treatment projects.

Individuals ranging in expertise from untrained, but interested, hobbyists to professional archeologists filled out archeological survey forms in or near the project. For that reason, the value of individual forms as information sources varies considerably. Interpretations of cultural or temporal affiliation are especially variable, as taxonomic systems become more refined through time.

Prehistoric

The earliest human occupation of North America occurred on the partially glaciated topography during the last glacial advance of the Pleistocene. The late Pleistocene climate, summarized by Dalquest and Schultz (1992), is one of little seasonal variation; a climate in which winters were mild and frost-free and summers were cool and humid.

Paleoindian Period/Big Game Hunting Tradition

Wiley (1966) described the Big-Game Hunting tradition as adapted to and developed on the grasslands of the late Pleistocene North American Plains and probably the fringe forests around them. By Wiley's minimal definition, an archeological culture is defined as part of the Big-Game Hunting tradition if it possesses the two diagnostic criteria: the use of chipped or flaked stone projectile points of a "lanceolate" (relatively long and narrow) shape and the reliance, at least in part, on Pleistocene large mammals that are now extinct for subsistence. Evidence of Paleoindian sites are rare in the project area consisting of a few isolated surface finds.

All of the archeological groups east of the Rocky Mountains that are commonly classified as Paleoindians fall into this category (Wormington 1957; Wiley 1966). Within this category, there

are several temporal and geographic subdivisions, based mainly on point types. Collectively they appear to share a lithic technology that produced diagnostic projectile points, butchering tools (scrapers, choppers, and knives) that are not distinctive enough to be diagnostic of subdivisions, a dependence or partial dependence on Pleistocene mammals for a food source, and a settlement pattern that included following migratory animal herds that were herd-centered rather than land-centered (Kelly and Todd 1988). The subdivisions are commonly divided into the following groups:

The Clovis tradition has a wide geographic range in North America (Wormington 1957). Radiocarbon dates for Clovis tradition sites range from 11,980 YBP from Blackwater Draw to 10,398 YBP at the Domebo Site (Hofman et al. 1989). They were far ranging nomadic foragers distinguished by their gracile lanceolate spear points and mammoth kill sites. Other tools associated with the culture include a number of scraper and knives made from prepared core blades.

The Folsom complex generally follows the Clovis tradition and was based primarily on the hunting of now extinct species of bison. The range of radiocarbon dates from Folsom complex sites is 9,590 YBP at Lubbock Lake to 11,600 YBP at the Lindenmeier site, Colorado (Hofman et al. 1989).

The Plano complex is the latest of the Paleoindian Stage and, in a general way, overlaps the Pleistocene-Holocene boundary. Large, well flaked, lanceolate projectile points that exhibit considerable variation characterize this complex. The Plano complex points are generally divided into two distinct groups, the Plainview series and the Parallel Flaked series (Wiley 1966). The Plainview series includes the Plainview, Midland, Milnesand and Meserve forms. The Parallel Flaked series includes the Scottsbluff, Eden, Angostura or Frederick, Hell Gap, Cody, and Agate Basin forms. The Dalton Period is an eastern Woodlands expression of the terminal Paleoindian/earliest Archaic periods. A recent review of the Dalton culture in eastern Oklahoma is contained in Ballenger (2001). The most diagnostic trait of this period is the Dalton point, a large lanceolate biface that was used both as a projectile and a knife (Johnson 1989, Sabo and Early 1990).

Archaic Period

The Archaic lithic technologies are dominated by expedient core and flake assemblages utilizing mostly locally available lithic types, with non-local or exotic lithic types representing formalized curated tools and bifaces. Additionally, the first widespread use of thermal alteration of lithic materials is evidenced (Hofman et al. 1989). The subdivisions of the Archaic are generally divided into the Early, Middle and Late periods (Bell 1984).

• *Early Archaic*

The Early Archaic is generally considered to roughly correspond in time to the Hypsithermal, or from approximately 7,500 YBP to about 5,000 YBP and represents a gradual transition from the earlier Paleoeastern traditions to a somewhat more sedentary lifestyle with more intensive utilization of local resources. Identified Early Archaic components are scarce in the project area. Typical Early Archaic tool assemblages include lanceolate, basally notched, side-notched, and

corner-notched dart points, grinding basins and manos, drills, knives, flake scrapers, hammerstones, bone awls, and bird bone beads.

- *Middle Archaic*

The Middle Archaic lasted from approximately 5,000 YBP to about 3,000 YBP. The climate was one of a gradual transition into a modern climatic regime. Diagnostic artifacts include straight and expanding stemmed forms (such as Bulverde, Williams, Calf Creek, Yarbrough, Marshall, Palmillas, Dallas, Trinity and Carrollton types) found in association with other tools (such as grinding slabs, choppers, adzes, bifacially flaked knives, axes, and burins).

The Calf Creek assemblage has been the subject of numerous investigations over the past few years. The Calf Creek horizon has been identified across nearly all of Oklahoma and many areas of Texas, Arkansas, Kansas, and Missouri (Wyckoff 1984; Neal and Drass 1998). The deep, basally notched Calf Creek point is characteristic and may be accompanied by Cossatot River points, practice notched pieces, scrapers, knives, and other tools. Sites tend to be small and situated on terraces or uplands overlooking rivers or smaller streams (Drass 2000).

- *Late Archaic*

The Late Archaic lasted from approximately 3,000 YBP to about 1,700 YBP or A.D. 200. The study area was intensely occupied during this period. Climatic evidence indicates generally modern conditions during the period. Throughout much of eastern North America, the Late Archaic period was marked by the development of increasingly clustered populations that formed the base for a number of sedentary Formative societies (Wiley 1966). Some domesticated crops have been reported from rockshelter sites in southwestern Missouri that were occupied at this time (Fritz 1997). Bison kill sites dated between about 20 B.C. and A.D. 970 are found in western Oklahoma, but are not, as yet, documented in central Oklahoma (Bement and Buehler 1994; Hughes 1991; Lintz et al. 1991). Many of the Late Archaic sites in north central and northeastern Oklahoma are found buried on terraces near streams. Some of these are over a meter below the current surface (Beuhler 1985; Reid 1984).

Woodland Period/Plains Woodland

The cultural tradition called Woodland in the eastern United States is defined by the introduction and presence of Woodland pottery, burial mounds and other earthworks, and by at least the introduction of horticulture (Wiley 1966). Subsistence during the period seems to have emphasized the hunting of deer and a variety of small game, fishing, and the gathering of wild plant foods. Horticulture may have also been adopted during this period, but evidence for this adaptation is not presently documented in this area.

The Woodland period on the Southern Plains is poorly documented and it is often difficult to distinguish these sites from Late Archaic sites. The two best known Woodland sites in central Oklahoma are the Roulston-Roger (Drass 1979) and Quillan (Hughes and Briscoe 1987) sites. Roulston-Rogers is located on a high terrace point on the north side of Little River, in Seminole County, radiocarbon dated to around A.D. 600. The Quillan Site is located on a buried terrace on Crutcho Creek in Oklahoma County, and was radiocarbon dated at A.D. 240.

Features from the Roulston-Rogers site included a number of burnt rock concentrations and stone lined hearths. Woodland features found at Quillan include a small structure and several small storage pits. Small corner notched "Scallorn" style arrow points, a variety of stemmed and notched dart points (of late Archaic style), rough cordmarked and smoothed surface pottery, a variety of flake and biface tools, and grinding stones are common traits of the period in central Oklahoma.

Late Prehistoric Period/Plains Village

The Late Prehistoric period dates from about 500 to 1050 YBP and is marked by significant changes in technology, settlement, and subsistence. These Southern Plains villagers appear to have developed from local Woodland people. Changes that are evident by about A.D. 1000 include intensification of horticulture, the widespread use of subsurface storage pits, expanded artifact inventories, and the use of permanent houses and larger settlements. In general, more Plains Village sites have been investigated in the Southern Plains than sites representing most other periods. Several Oklahoma sites dating to this period have been investigated and provide some information on the people who lived here. Typical Late Prehistoric artifacts include cordmarked and plain globular pots, side- and unnotched arrow points, beveled knives, numerous scrapers (particularly snub-nosed end scrapers), bison bone horticultural tools, and trade items from the Southwest or Caddoan areas.

Protohistoric or Late Ceramic

The Late Ceramic or Protohistoric period represents the time of initial contact between Native American populations and European explorers, about A.D. 1500 to 1800. Indigenous populations of this period were able to gather into large villages due to reliable agricultural subsistence, while increasing their dependency on bison procurement. Most of the Plains Village complexes in the western half of Oklahoma are considered ancestral to the Wichita or other Plains Caddoan groups, whereas southeastern Oklahoma is tied to the Caddo. Apachean groups, also, migrated into parts of western Oklahoma and Texas sometime before A.D. 1550 (Wilcox 1981), but Wichita and Caddo groups continued to occupy central and eastern Oklahoma at the time of historic contact. There are few early historic accounts of native cultures in Oklahoma, and the relationship between Late Prehistoric groups and the later protohistoric and historic people is often unclear.

Historic Period

The history of the region includes six major historical eras including the Exploration period, the Civil War, the Resettlement and Reconstruction period, early Statehood, the Depression Era, and the Modern Era.

The Canadian River was a thoroughfare for explorers after its discovery by Coronado in 1541, however Spanish expeditions remained well west of Central Oklahoma. French traders, trading with the Southern Plains tribes in the 1680s, established a line of trading centers along the eastern edge of the region (Rathjen 1973). The Mallet Brothers, Paul and Pierre, were the first to descend the entire river in 1739 (Morris 1997). The Spanish, alarmed by French incursion on their northeastern frontier, closed their borders and stopped further exploration of the Southern Plains. In 1803, the United States purchased a great tract of land west of the Mississippi in the

Louisiana Purchase. The purchase ended the threat of Spanish reprisal for trespassing and opened the Oklahoma area to a flood of trappers and traders who capitalized on the fur trade.

Stephen Long was dispatched by Pike to find the source of the Red River (and the southern boundary of the new territory in 1820 (Smallwood 1976). After following the front range of the Rockies south, Long's party located the Canadian (which he mistook for the Red River) and descended the stream, discovering his mistake when he reached the confluence of the Canadian and Arkansas River. Thomas James followed the Canadian River to New Mexico in 1821 (Thomas 1976) and was followed by McKnight and James in 1823, James in 1824, Gregg in 1839, and others. During the 1820's and early 1830's, the region now known as Oklahoma was called Indian Territory after treaties with the "Five Civilized Tribes" and their subsequent removal to this area.

A wagon road was established along the Canadian River after the Whipple Expedition of 1853 (Ware 1976), whose task it was to map the California Trail from Fort Smith to the California gold fields and Jessie Chisholm established a part of the Chisholm Cattle Trail in 1867 which passed close to the project area. Jesse Chisholm died in 1868 while visiting an Arapaho village on the North fork of the Canadian River (Gregg 1954).

Because Indian Territory had been proposed as a haven for American Indians and free from white settlement, development occurred in the states surrounding the area. Texas, Arkansas, Missouri, and Kansas experienced tremendous growth as the postwar economies roared up again. Use of the Unassigned Lands by drovers, that portion of Oklahoma not assigned to any tribes as a reservation, prompted settlers to lobby Washington to open the area for settlement. President Harrison finally issued a proclamation officially opening the Unassigned Lands to settlement on April 22, 1889. Homesteads were taken by a race for 160-acre parcels.

RESEARCH GOALS

The investigations documented in this report were undertaken to record the surface expression of any cultural resources located in the proposed Yukon Waterline Project r/w located in parts of Canadian and Oklahoma counties, Oklahoma. This was intended to be only an inventory of archeological sites visible on the ground surface or discovered through shovel probes excavated to depths of less than one meter. The major goals of this survey were: (a) identify both prehistoric and historic archeological sites within the project area; (b) to determine the eligibility of the identified sites for inclusion in the NRHP; and (c) to provide recommendations for the treatment of these sites.

Given the limited scope of the project, no attempt was made to produce detailed models of site settlement or to provide in-depth analysis of the limited artifact assemblage observed during the course of the project. Interpretation of cultural resources found has followed standard local practices. By strict definition, cultural resources are any evidence of human use or occupation, but for this project, the term was restricted to cultural remains that were at least 50 years in age.

RESEARCH METHODS

The pedestrian survey was conducted to document the surface and limited subsurface expression of any cultural resources located in the proposed Yukon Waterline Project r/w corridor.

The inventory area was defined by paced distances and landmark orientation observed in the field and comparison to recent, large-scale aerial photographs. The field methodology involved pedestrian transects, walked in a zigzag fashion, at intervals of approximately 15 m (50 ft) in the proposed r/w area. The proposed r/w corridor extends approximately 65 feet ([ft] 19.8 meters [m]) from the various roadway centerlines. Each proposed elevated water tower will be located in a 500 ft by 500 ft area. The inventory area includes approximately 98.1 acres. The r/w was not staked prior to the cultural resources survey. The entire proposed corridor and water tower location was covered by pedestrian means.

Shovel probes were dug in areas of reduced visibility or at located archeological resources to determine the extent of the site and if subsurface materials or features were present. The shovel probes were about 30 cm by 30 cm and excavated to about 50 cm. These shovel probes were screened through ¼-in mesh hardware cloth and were back-filled after excavation. This probe was used to determine if any subsurface artifactual materials are present in the survey corridor.

Small amounts of recent historic trash attributed to residential and urban development activities were noted in the project area during the course of the survey, including barbed wire, cartridge casings, and abandoned fence posts, as well as oil and gas development activities. These materials and surface modifications were discounted as cultural resources for the purposes of this report.

ARTIFACT ANALYSIS

No collections of artifacts were made.

SURVEY CONDITIONS

Most of the inventory area yielded good to excellent surface visibility. Most of the project is located in areas with surface visibility ranging between approximately 30 to 80 percent, averaging around 70 percent. Lowland areas near drainages afforded surface visibility of approximately 20 to 70 percent, averaging 40 percent.

CARTOGRAPHIC REVIEW

A review of available cartographic resources was performed drawing on information obtained from the OAS, Oklahoma Geological Survey (OGS), the University of Oklahoma Library System and the Oklahoma Department of Libraries. These resources include both historic maps and historic aerial photographs. Scanned images or xerographic copies of these resources were obtained and used to: (a) locate historic resources in the project area; (b) aid in determining landform modifications; and (c) aid in the evaluation of located resources.

Reviewed topographic maps include the 15 minute USGS Chickasha quadrangle from 1904 and Oklahoma City quadrangle from 1956 for Segment 1, and the 15 minute USGS Kingfisher quadrangle from 1895 for Segment 2 and the current 7.5 minute USGS maps. Reviewed dated aerial photographs include 1941 and 1951 for Segment 1 and 1941, 1951, 1957 and 1964 for Segment 2.

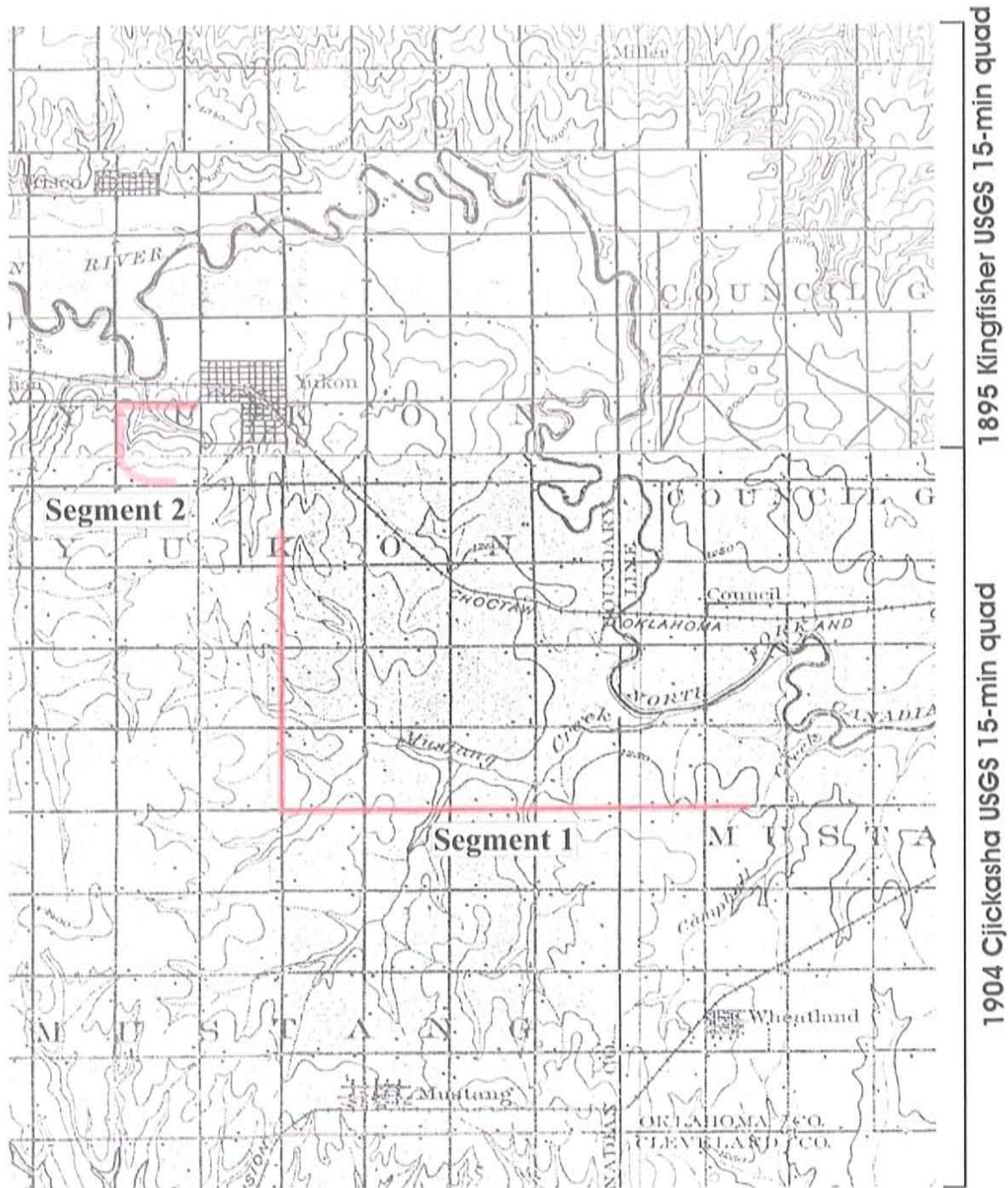


Figure 4. Composite 15-minute USGS topographic maps of project area.

4. RESEARCH RESULTS

One NRHP Property is located adjacent to the project corridor in Segment 1.

Czech Hall, National Register of Historic Places 80003258

The Czech Hall is an approximately 40 by 80 foot building built in 1925 and added to the NRHP in 1980. It is currently in use as a gathering place for dances, divadlos and social events and is a focus of the larger Czech and Bohemian community.

This site is located adjacent the proposed Yukon Waterline Project corridor (Figures 5 and 6). The sidewalk leading into the main entrance to Czech Hall is located 63 feet (measured) from the centerline of Czech Hall Road, the porch on the building itself is located about 67 feet from the roadway c/l meaning the building itself is just outside of the proposed r/w. The NRHP nomination form indicates a 2-acre area but does not include a map showing the NRHP boundaries. An included note indicates the caretakers house and original location of the hall is not included in the boundary.



Figure 5. March 26, 2002 aerial image of Czech Hall showing relationship to project corridor.



Figure 6. View to the south of Czech Hall showing the proximity to the road.

34CN149, SW/SE/SW Section 19, T12N R5W

This is a razed historic farmstead located along the north side of Northwest 23rd Street (Vandement Avenue). It consists of a sparse artifact scatter, fence and water well in an area of 10 to 30 percent surface visibility. A few cultivated plants including trees and bushes are present near the fence that surrounds the site area. Also present along the fence were some of the larger artifacts observed such as bricks and a terra cotta pipe segment. One house-sized leveled area was observed in the project corridor, however no artifacts or evidence of a foundation was noted. The entire site area covers about 20 by 30 meters.

The 15-minute USGS Chickasha topographic quadrangle map from 1904 shows a structure near this area and aerial photographs from 1941 to 1964 shows a farmstead at this location. The 1951 aerial photograph shows the clearest detail of this site. This image (Figure 7) shows a house structure and associated outbuildings in the farmstead complex. This farmstead appears to have been abandoned shortly after Interstate 40 was completed through this area.

The south portions of this site are located within the project corridor of Segment 2. The site is an early to mid-20th century farmstead that has been razed and no intact foundations or features other than a water well were observed. The artifact scatter is very sparse and includes only architectural debris. This site does not appear to meet the eligibility requirements for inclusion in the NRHP and no further archeological concern is warranted.



Figure 7. 1951 aerial photograph of the site area showing building distribution.



Figure 8. View to the east showing the proximity of the site to the road.



Figure 9. View to the west of a water well at site 34CN149.

34CN150, NE/NW/NE Section 19, T12N R5W

This is a razed historic farmstead located along the south side of West Main Street (US Highway 66). It consists of a very sparse artifact scatter, a cellar and water well in an area of 40 to 60 percent surface visibility in cropped grasses in a well-maintained housing addition entryway. One house-sized leveled area was observed in the project corridor, however no artifacts or evidence of a foundation was noted. The entire site area covers about 20 by 40 meters.

The aerial photographs from 1941 to 1964 shows a farmstead at this location. The 1951 aerial photograph shows the clearest detail of this site, however this photograph was taken before US Hwy 66 was widened into a four-lane divided roadway. This image (Figure 10) shows a house structure and associated outbuildings in the farmstead complex. This farmstead appears to have been abandoned and razed due to highway construction.

The north portions of this site are located within the project corridor of Segment 2. This site has been heavily impacted and other than a water well and the intact cellar, no features or artifactual evidence of this site remains. The cellar and water well are located outside of the proposed r/w and will not be further impacted by this project. This site does not appear to meet the eligibility requirements for inclusion in the NRHP and no further archeological concern is warranted.



Figure 10. 1951 aerial photograph showing site 34CN150.



Figure 11. View to the northwest of the intact cellar at 34CN150.

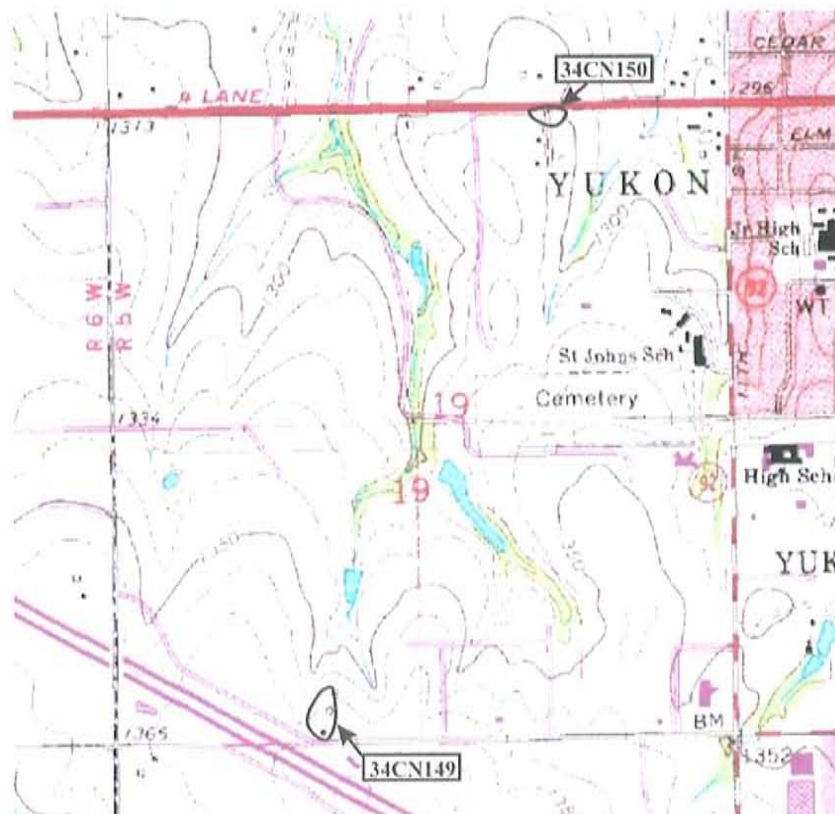


Figure 12. Composite topographic map showing site locations.

SUMMARY OF RECOMMENDATIONS

Two historic archeological sites are partially located in the proposed project corridor (Figure 12). Neither of these sites appear to meet any of the criteria of significance of the NRHP and no further archeological concern is warranted. Additionally, one NRHP listed property is located within the proposed project corridor.

According to the SHPO Archeologist, Charles Wallis, the proposed waterline will cross a portion of the property designated within the 2-acre area of the Czech Hall NRHP property. However, Mr. Wallis indicated that provided the below ground pipeline maintains the existing utility easement and does not impact structures such as gates or entryways, the project would be considered to have no adverse effect to the National Register property.

Archeological clearance is recommended for the project as it is currently planned and described in this report.


Christopher Cojeen
Principal Investigator

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Oklahoma
Archeological Site Survey Form

Site # 34CN149

County Canadian

Complete All Sections

1. Site Number and Name

Site Name _____
(derived from owners' name, etc.)

Project No. _____
(temporary number or name assigned
during project)

2. Locational Information

U.T.M. Reference

Zone	Northing	Easting
<u>14</u>	<u>3928290</u>	<u>611421</u>

for office use

Legal Description

SW 1/4 of SE 1/4 of SW 1/4 of Section 19 Township 12N Range 5W

U.S.G.S. Quad Name

Quad Date (revised)

Richland

1990

Other Locational References (i.e., benchmarks, road intersections, bridges, etc.
please give distance and bearing to site)

Along the north side of NW 23rd Street (Vandament Avenue), Yukon

3. Owner(s) of Property

Name(s)

Street and Number

City and Town

State

Zip Code

4. Site Surveyed By:

Name

Reported by: (if different)

Name

Cojeen Archaeological Services

Date Recorded

11/6/2004

Time spent at site and time of day

1 hour, a.m.

5. Cultural Affiliation

Cultural Periods

- | | | | | |
|---|----------------------------------|---------------------------------|-------------------------------|---|
| <input type="checkbox"/> Unassigned Prehistoric | | | | <input type="checkbox"/> Village Farming/Mississippian |
| <input type="checkbox"/> Paleoindian | <input type="checkbox"/> Early | <input type="checkbox"/> Middle | <input type="checkbox"/> Late | <input type="checkbox"/> Plains Village |
| <input type="checkbox"/> Archaic | <input type="checkbox"/> Early | <input type="checkbox"/> Middle | <input type="checkbox"/> Late | <input type="checkbox"/> Protohistoric/Historic Indian |
| <input type="checkbox"/> Woodland | <input type="checkbox"/> Eastern | <input type="checkbox"/> Plains | | <input checked="" type="checkbox"/> Historic non-Indian |

Archeological Cultures, Phases, etc. Represented

How was cultural affiliation determined (diagnostic artifacts, radiocarbon dates, etc.)

6. Historic Phase Identification (Ethnic)

Circle appropriate group

- | | | |
|-----------------|--------------|--------------------|
| 1. Choctaw | 11. Pawnee | 21. Creek |
| 2. Cherokee | 12. Arapaho | 22. Dakotas |
| 3. Sauc-Fox | 13. Ottawa | 23. Chickasaw |
| 4. Pottawatomie | 14. Wichita | 24. 12 & 17 |
| 5. Seminole | 15. Quapaw | 25. Missouri-Otos |
| 6. Comanche | 16. Osage | 26. Iowa |
| 7. Apache | 17. Cheyenne | 27. Anglo-American |
| 8. Kiowa | 18. Caddo | 28. French |
| 9. Kiowa-Apache | 19. Shawnee | 29. Spanish |
| 10. Kickapoo | 20. Delaware | 30. _____ Other |

How was historic identification determined?

7. Historic Site Range 9

- | | |
|--------------------------|------------------------|
| 0. Missing data; unknown | 5. 1890-1929 |
| 1. pre-1800 | 6. 1930-1950 |
| 2. 1800-1830 | 7. 1800-1900 |
| 3. 1830-1859 | 8. 1800-present |
| 4. 1860-1889 | <u>9. 1900-present</u> |

8. Inferred Site Type (can be more than one category)

- | | |
|---|---|
| <input type="checkbox"/> open habitation w/o mounds | <input type="checkbox"/> petroglyph - pictograph |
| <input type="checkbox"/> open habitation with mounds | <input type="checkbox"/> isolated burials (<2) |
| <input type="checkbox"/> earth mound (not midden mound) | <input type="checkbox"/> cemetery (>2) |
| <input type="checkbox"/> mound complex | <input type="checkbox"/> specialized activity sites |
| <input type="checkbox"/> stone mound/rock piles | <input type="checkbox"/> rock alignments (tipi rings, etc.) |
| <input type="checkbox"/> burned rock concentrations | <input checked="" type="checkbox"/> historic farmstead |
| <input type="checkbox"/> non-mound earthworks | <input type="checkbox"/> historic mill/industrial |
| <input type="checkbox"/> rock shelter | <input type="checkbox"/> historic fort |
| <input type="checkbox"/> cave | <input type="checkbox"/> dugout |
| <input type="checkbox"/> quarry/workshop | <input type="checkbox"/> historic trash dump |

9. Midden At Site

- | | |
|--|---|
| <input type="checkbox"/> don't know | <input type="checkbox"/> present, earth |
| <input checked="" type="checkbox"/> absent | <input type="checkbox"/> present shell |
| | <input type="checkbox"/> present, rock |

10. Materials Collected

<u>Type</u>	<u>Number</u>	<u>Type</u>	<u>Number</u>
<input type="checkbox"/> ceramics	_____	<input type="checkbox"/> scrapers (unshafted)	_____
<input type="checkbox"/> projectile points/ base fragments	_____	<input type="checkbox"/> debitage (flakes, cores, chunks)	_____
<input type="checkbox"/> hafted scrapers	_____	<input type="checkbox"/> ground/pecked/battered stone	_____
<input type="checkbox"/> drills	_____	<input type="checkbox"/> worked bone/shell	_____
<input type="checkbox"/> bifaces/frags.	_____	<input type="checkbox"/> human bone	_____
<input type="checkbox"/> unifaces	_____	<input type="checkbox"/> faunal remains	_____
<input type="checkbox"/> perforators/ gravers	_____	<input type="checkbox"/> floral remains	_____
<input type="checkbox"/> spokeshaves	_____	<input type="checkbox"/> other prehistoric	_____
		<input type="checkbox"/> historic (describe)	_____

Total Items _____

Briefly describe diagnostic artifacts including type names. Attach outline drawings.

Materials observed but not collected

Brick, terra cotta pipe fragment

Name and address of other collections from site

11. Artifact Repository

Name of institution where artifacts are to be stored

Photos

- ☐ black and white
☒ color

____ no. of pictures
4 no. of pictures

Name and address of institution where photos are filed

Cojeen Archaeological Services, P.O. Box 1186, Norman, Oklahoma 73070

12. Evidence of Recent Vandalism Observed:

☒ no

☐ yes

13. Site Condition: 5

1. apparently undisturbed
 2. <25% disturbed
 3. 26-50% disturbed
 4. 51-75% disturbed

5. 76-99% disturbed
 6. totally destroyed
 7. disturbed, % unknown

14. Major Land Use

- | | | |
|--|--|--|
| <input type="checkbox"/> cultivated field | <input type="checkbox"/> modern cemetery | <input type="checkbox"/> commercial |
| <input checked="" type="checkbox"/> pasture | <input type="checkbox"/> mining | <input type="checkbox"/> military |
| <input type="checkbox"/> woods, forest | <input type="checkbox"/> inundated | <input type="checkbox"/> logging/fire break |
| <input checked="" type="checkbox"/> road/trail | <input type="checkbox"/> industrial | <input checked="" type="checkbox"/> scrub/secondary growth/old field |
| <input type="checkbox"/> ditch/dike/barrow pit | <input type="checkbox"/> residential | <input type="checkbox"/> modern dump |
| <input type="checkbox"/> landfill | <input type="checkbox"/> recreation | |

Other

15. Amount of Ground Surface Visible: 2

1. <10%
2. 11-25%

3. 26-50%
 4. 51-75%

5. 76-90%
 6. 91-100%

Survey Conditions (wet, dry, sunny, ground coverage, etc.):

Sunny, dry, medium height grasses with mixed scrub and hardwoods overstory16. Physiographic Division: 4

1. High Plains
 2. Gypsum Hills
 3. Wichita Mtns.
4. Red Bed Plains
 5. Arbuckle Mtns.

6. Sandstone Hills
 7. Prairie Plains
 8. Ozark Plateau
 9. Ouachita Mtns.
 10. Red River Plains

17. Landform Type: 5

1. Floodplain
 2. Terrace
 3. Hillside-Valley Wall

4. Dissected Uplands
5. Undissected Uplands

18. Locality Type (specific site setting): 1

1. Level
 2. Knoll-Low Land
 3. Blowout
 4. Ridge-Upland

5. Mesa
 6. Slope
 7. Bluff Crest
 8. Bluff Base

19. Soils (if known)

_____ Association, _____ Series, _____ Type

20. _____ Elevation amsl _____ Slope (degrees) _____ Slope
(facing direction)21. Natural Vegetation: 2

1. short grasses
2. mixed grasses
 3. tall grasses
 4. cross-timber
 5. shin-oak

6. mesquite
 7. juniper-pinon
 8. oak-hickory forest
 9. oak-pine
 10. loblolly pine forest

22. Site Area 600 (square meters)Basis for area estimate: 2

1. taped
2. paced

3. guessed
 4. range finder

5. alidade/transit

Confident of site boundaries

☒ yes☐ no

23. Description of Site:

Give physical description of site and its setting, including dimensions, features, nature of materials and artifacts concentrations. Include copy of U.S.G.S. topographic map with site location and boundaries marked.

This is a razed historic farmstead located along the north side of Northwest 23rd Street (Vandement Avenue). It consists of a sparse artifact scatter, fence and water well in an area of 10 to 30 percent surface visibility. A few cultivated plants including trees and bushes are present near the fence that surrounds the site area. Also present along the fence were some of the larger artifacts observed such as bricks and a terra cotta pipe segment. One house-sized leveled area was observed in the project corridor, however no artifacts or evidence of a foundation was noted. The entire site area covers about 20 by 30 meters.

The 15-minute USGS Chickasha topographic quadrangle map from 1904 shows a structure near this area and aerial photographs from 1941 to 1964 shows a farmstead at this location. The 1951 aerial photograph shows the clearest detail of this site. This image shows a house structure and associated outbuildings in the farmstead complex. This farmstead appears to have been abandoned shortly after Interstate 40 was completed through this area.

24. Drainage: 3

- | | | |
|-----------------------|------------------------------------|------------------------|
| 1. Arkansas | 7. Illinois | 13. Poteau |
| 2. Beaver-N. Canadian | 8. Kiamichi | 14. Red |
| 3. <u>Canadian</u> | 9. Little River
(McCurtain Co.) | 15. Salt Fork Arkansas |
| 4. Caney | 10. Muddy Boggy | 16. Salt Fork Red |
| 5. Cimarron | 11. Neosho | 17. Verdigris |
| 6. Deep Fork | 12. North Fork Red | 18. Washita |

25. Nearest Natural Source of Water: 8

- | | |
|---------------------------------|---|
| 1. Permanent stream/creek | 5. River |
| 2. Intermittent stream | 6. Slough or oxbow lake |
| 3. Permanent spring | 7. Relic stream channel (if observable) |
| 4. Intermittent spring/seep/bog | 8. <u>Also consider wells if site is historic</u> |

26. Distance to Water (in 10's of meters): 1

27. Investigation Type: 1

- | | |
|-----------------------------------|-----------------------|
| 1. <u>Reconnaissance (survey)</u> | 3. Excavated |
| 2. Intensive (survey and testing) | 4. Volunteered report |

28. Significance Status:

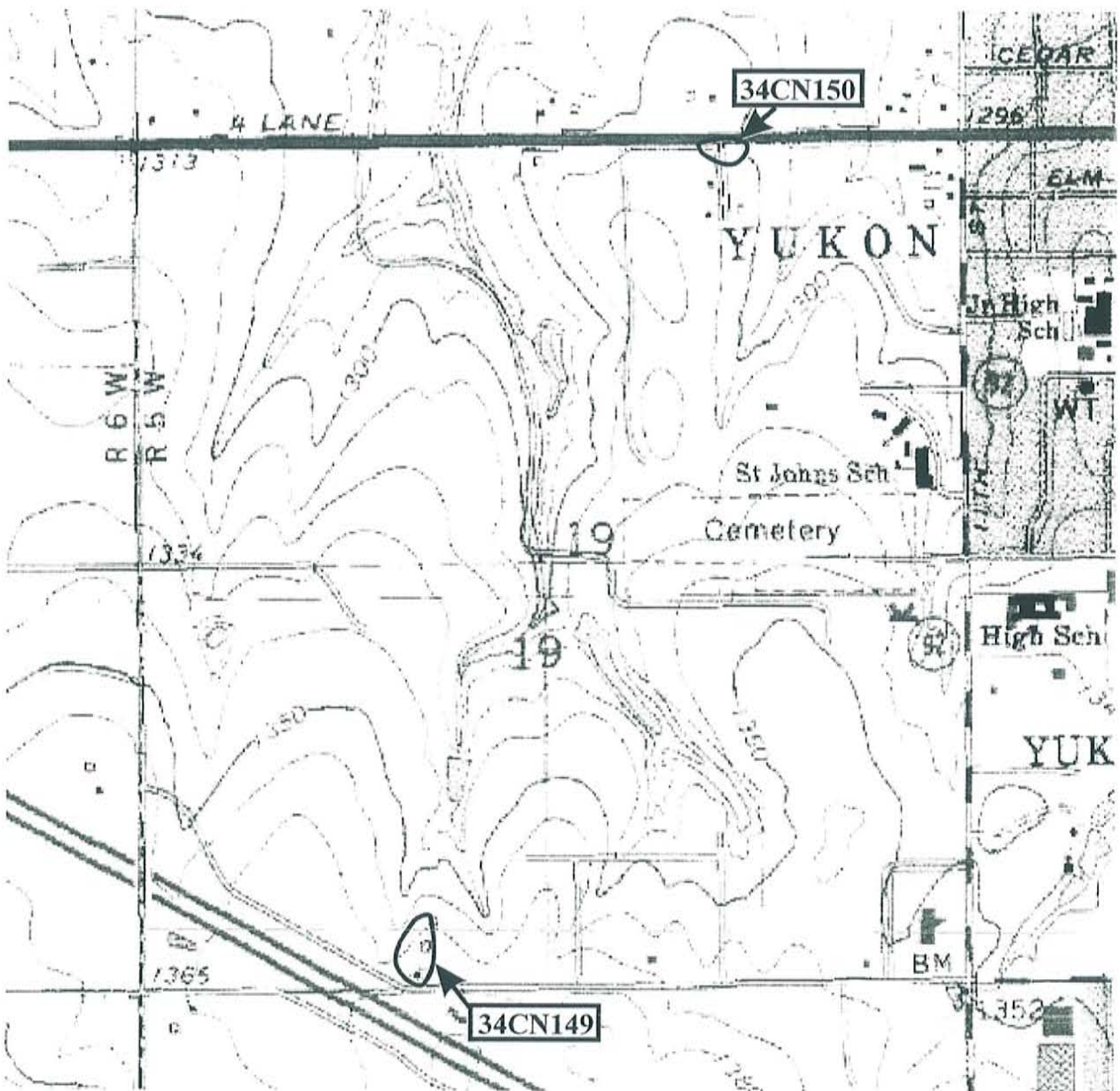
- ☐ National Register Property
- ☐ Eligible for National Register
- ☐ Nominated to National Register by SHPO
- ☐ Considered eligible but not nominated by SHPO
- ☒ Inventory Site
- ☐ National Register status not assessed

29. Discuss the Potential Significance of the Site

The artifact scatter is very sparse and includes only architectural debris. This site does not appear to meet the eligibility requirements for inclusion in the NRHP and no further archeological concern is warranted.

30. Published or Forthcoming Reports on the Site

Report on the Cultural Resources Inventory of the USACE and City of Yukon
Waterline Project, Yukon, Canadian and Oklahoma Counties, Oklahoma



Oklahoma
Archeological Site Survey Form

Site # 34CN150

County Canadian

Complete All Sections

1. Site Number and Name

Site Name _____
(derived from owners' name, etc.)

Project No. _____
(temporary number or name assigned
during project)

2. Locational Information

U.T.M. Reference

Zone	Northing	Easting
<u>14</u>	<u>3929807</u>	<u>611969</u>

for office use

Legal Description

NE 1/4 of NW 1/4 of NE 1/4 of Section 19 Township 12N Range 5W

U.S.G.S. Quad Name

Quad Date (revised)

Minco NE

1990

Other Locational References (i.e., benchmarks, road intersections, bridges, etc.
please give distance and bearing to site)

Along the south side of US 66 (Main Street), Yukon

3. Owner(s) of Property

Name(s)

Street and Number

City and Town

State

Zip Code

4. Site Surveyed By:

Name

Cojeen Archaeological Services

Date Recorded

11/6/2004

Reported by: (if different)

Name

Time spent at site and time of day

1 hour, a.m.

5. Cultural Affiliation

Cultural Periods

- | | | | | |
|---|----------------------------------|---------------------------------|-------------------------------|---|
| <input type="checkbox"/> Unassigned Prehistoric | | | | <input type="checkbox"/> Village Farming/Mississippian |
| <input type="checkbox"/> Paleoindian | <input type="checkbox"/> Early | <input type="checkbox"/> Middle | <input type="checkbox"/> Late | <input type="checkbox"/> Plains Village |
| <input type="checkbox"/> Archaic | <input type="checkbox"/> Early | <input type="checkbox"/> Middle | <input type="checkbox"/> Late | <input type="checkbox"/> Protohistoric/Historic Indian |
| <input type="checkbox"/> Woodland | <input type="checkbox"/> Eastern | <input type="checkbox"/> Plains | | <input checked="" type="checkbox"/> Historic non-Indian |

Archeological Cultures, Phases, etc. Represented

How was cultural affiliation determined (diagnostic artifacts, radiocarbon dates, etc.)

6. Historic Phase Identification (Ethnic)

Circle appropriate group

- | | | |
|-----------------|--------------|--------------------|
| 1. Choctaw | 11. Pawnee | 21. Creek |
| 2. Cherokee | 12. Arapaho | 22. Dakotas |
| 3. Sauc-Fox | 13. Ottawa | 23. Chickasaw |
| 4. Pottawatomie | 14. Wichita | 24. 12 & 17 |
| 5. Seminole | 15. Quapaw | 25. Missouri-Otos |
| 6. Comanche | 16. Osage | 26. Iowa |
| 7. Apache | 17. Cheyenne | 27. Anglo-American |
| 8. Kiowa | 18. Caddo | 28. French |
| 9. Kiowa-Apache | 19. Shawnee | 29. Spanish |
| 10. Kickapoo | 20. Delaware | 30. _____ Other |

How was historic identification determined?

7. Historic Site Range 9

- | | |
|--------------------------|------------------------|
| 0. Missing data; unknown | 5. 1890-1929 |
| 1. pre-1800 | 6. 1930-1950 |
| 2. 1800-1830 | 7. 1800-1900 |
| 3. 1830-1859 | 8. 1800-present |
| 4. 1860-1889 | 9. <u>1900-present</u> |

8. Inferred Site Type (can be more than one category)

- | | |
|---|---|
| <input type="checkbox"/> open habitation w/o mounds | <input type="checkbox"/> petroglyph - pictograph |
| <input type="checkbox"/> open habitation with mounds | <input type="checkbox"/> isolated burials (<2) |
| <input type="checkbox"/> earth mound (not midden mound) | <input type="checkbox"/> cemetery (>2) |
| <input type="checkbox"/> mound complex | <input type="checkbox"/> specialized activity sites |
| <input type="checkbox"/> stone mound/rock piles | <input type="checkbox"/> rock alignments (tipi rings, etc.) |
| <input type="checkbox"/> burned rock concentrations | <input checked="" type="checkbox"/> historic farmstead |
| <input type="checkbox"/> non-mound earthworks | <input type="checkbox"/> historic mill/industrial |
| <input type="checkbox"/> rock shelter | <input type="checkbox"/> historic fort |
| <input type="checkbox"/> cave | <input type="checkbox"/> dugout |
| <input type="checkbox"/> quarry/workshop | <input type="checkbox"/> historic trash dump |

9. Midden At Site

- | | |
|--|---|
| <input type="checkbox"/> don't know | <input type="checkbox"/> present, earth |
| <input checked="" type="checkbox"/> absent | <input type="checkbox"/> present shell |
| | <input type="checkbox"/> present, rock |

10. Materials Collected

<u>Type</u>	<u>Number</u>	<u>Type</u>	<u>Number</u>
<input type="checkbox"/> ceramics	_____	<input type="checkbox"/> scrapers (unshafted)	_____
<input type="checkbox"/> projectile points/ base fragments	_____	<input type="checkbox"/> debitage (flakes, cores, chunks)	_____
<input type="checkbox"/> hafted scrapers	_____	<input type="checkbox"/> ground/pecked/battered stone	_____
<input type="checkbox"/> drills	_____	<input type="checkbox"/> worked bone/shell	_____
<input type="checkbox"/> bifaces/frags.	_____	<input type="checkbox"/> human bone	_____
<input type="checkbox"/> unifaces	_____	<input type="checkbox"/> faunal remains	_____
<input type="checkbox"/> perforators/ gravers	_____	<input type="checkbox"/> floral remains	_____
<input type="checkbox"/> spokeshaves	_____	<input type="checkbox"/> other prehistoric	_____
		<input type="checkbox"/> historic (describe)	_____

Total Items _____

Briefly describe diagnostic artifacts including type names. Attach outline drawings.

Materials observed but not collected

Intact cellar, water well

Name and address of other collections from site

11. Artifact Repository

Name of institution where artifacts are to be stored

Photos

- ☐ black and white
☒ color

_____ no. of pictures
4 no. of pictures

Name and address of institution where photos are filed

Cojeen Archaeological Services, P.O. Box 1186, Norman, Oklahoma 73070

12. Evidence of Recent Vandalism Observed:

☒ no

☐ yes

13. Site Condition: 5

1. apparently undisturbed
 2. <25% disturbed
 3. 26-50% disturbed
 4. 51-75% disturbed

5. 76-99% disturbed
 6. totally destroyed
 7. disturbed, % unknown

14. Major Land Use

- | | | |
|--|---|---|
| <input type="checkbox"/> cultivated field | <input type="checkbox"/> modern cemetery | <input type="checkbox"/> commercial |
| <input type="checkbox"/> pasture | <input type="checkbox"/> mining | <input type="checkbox"/> military |
| <input type="checkbox"/> woods, forest | <input type="checkbox"/> inundated | <input type="checkbox"/> logging/fire break |
| <input checked="" type="checkbox"/> road/trail | <input type="checkbox"/> industrial | <input type="checkbox"/> scrub/secondary growth/old field |
| <input type="checkbox"/> ditch/dike/barrow pit | <input checked="" type="checkbox"/> residential | <input type="checkbox"/> modern dump |
| <input type="checkbox"/> landfill | <input type="checkbox"/> recreation | |

Other

15. Amount of Ground Surface Visible: 4

- | | | |
|-----------|------------------|------------|
| 1. <10% | 3. 26-50% | 5. 76-90% |
| 2. 11-25% | 4. <u>51-75%</u> | 6. 91-100% |

Survey Conditions (wet, dry, sunny, ground coverage, etc.):

Sunny, dry, cropped grasses in maintained housing addition entryway16. Physiographic Division: 4

- | | |
|--------------------------|----------------------|
| 1. High Plains | 6. Sandstone Hills |
| 2. Gypsum Hills | 7. Prairie Plains |
| 3. Wichita Mtns. | 8. Ozark Plateau |
| 4. <u>Red Bed Plains</u> | 9. Ouachita Mtns. |
| 5. Arbuckle Mtns. | 10. Red River Plains |

17. Landform Type: 5

- | | |
|-------------------------|-------------------------------|
| 1. Floodplain | 4. Dissected Uplands |
| 2. Terrace | 5. <u>Undissected Uplands</u> |
| 3. Hillside-Valley Wall | |

18. Locality Type (specific site setting): 1

- | | |
|-------------------|----------------|
| 1. <u>Level</u> | 5. Mesa |
| 2. Knoll-Low Land | 6. Slope |
| 3. Blowout | 7. Bluff Crest |
| 4. Ridge-Upland | 8. Bluff Base |

19. Soils (if known)

_____ Association, _____ Series, _____ Type

20. _____ Elevation amsl _____ Slope (degrees) _____ Slope
(facing direction)21. Natural Vegetation: 2

- | | |
|-------------------------|--------------------------|
| 1. short grasses | 6. mesquite |
| 2. <u>mixed grasses</u> | 7. juniper-pinon |
| 3. tall grasses | 8. oak-hickory forest |
| 4. cross-timber | 9. oak-pine |
| 5. shin-oak | 10. loblolly pine forest |

22. Site Area 800 _____ (square meters)Basis for area estimate: 2

- | | | |
|-----------------|-----------------|--------------------|
| 1. taped | 3. guessed | 5. alidade/transit |
| 2. <u>paced</u> | 4. range finder | |

Confident of site boundaries

☒ yes

☐ no

Page 6

23. Description of Site:

Give physical description of site and its setting, including dimensions, features, nature of materials and artifacts concentrations. Include copy of U.S.G.S. topographic map with site location and boundaries marked.

This is a razed historic farmstead located along the south side of West Main Street (US Highway 66). It consists of a very sparse artifact scatter, a cellar and water well in an area of 40 to 60 percent surface visibility in cropped grasses in a well-maintained housing addition entryway. One house-sized leveled area was observed in the project corridor, however no artifacts or evidence of a foundation was noted. The entire site area covers about 20 by 40 meters.

The aerial photographs from 1941 to 1964 shows a farmstead at this location. The 1951 aerial photograph shows the clearest detail of this site, however this photograph was taken before US Hwy 66 was widened into a four-lane divided roadway. This image shows a house structure and associated outbuildings in the farmstead complex. This farmstead appears to have been abandoned and razed due to highway construction.

24. Drainage: 3

- | | | |
|-----------------------|------------------------------------|------------------------|
| 1. Arkansas | 7. Illinois | 13. Poteau |
| 2. Beaver-N. Canadian | 8. Kiamichi | 14. Red |
| <u>3. Canadian</u> | 9. Little River
(McCurtain Co.) | 15. Salt Fork Arkansas |
| 4. Caney | 10. Muddy Boggy | 16. Salt Fork Red |
| 5. Cimarron | 11. Neosho | 17. Verdigris |
| 6. Deep Fork | 12. North Fork Red | 18. Washita |

25. Nearest Natural Source of Water: 8

- | | |
|---------------------------------|---|
| 1. Permanent stream/creek | 5. River |
| 2. Intermittent stream | 6. Slough or oxbow lake |
| 3. Permanent spring | 7. Relic stream channel (if observable) |
| 4. Intermittent spring/seep/bog | <u>8. Also consider wells if site is historic</u> |

26. Distance to Water (in 10's of meters): 1

27. Investigation Type: 1

- | | |
|-----------------------------------|-----------------------|
| <u>1. Reconnaissance (survey)</u> | 3. Excavated |
| 2. Intensive (survey and testing) | 4. Volunteered report |

28. Significance Status:

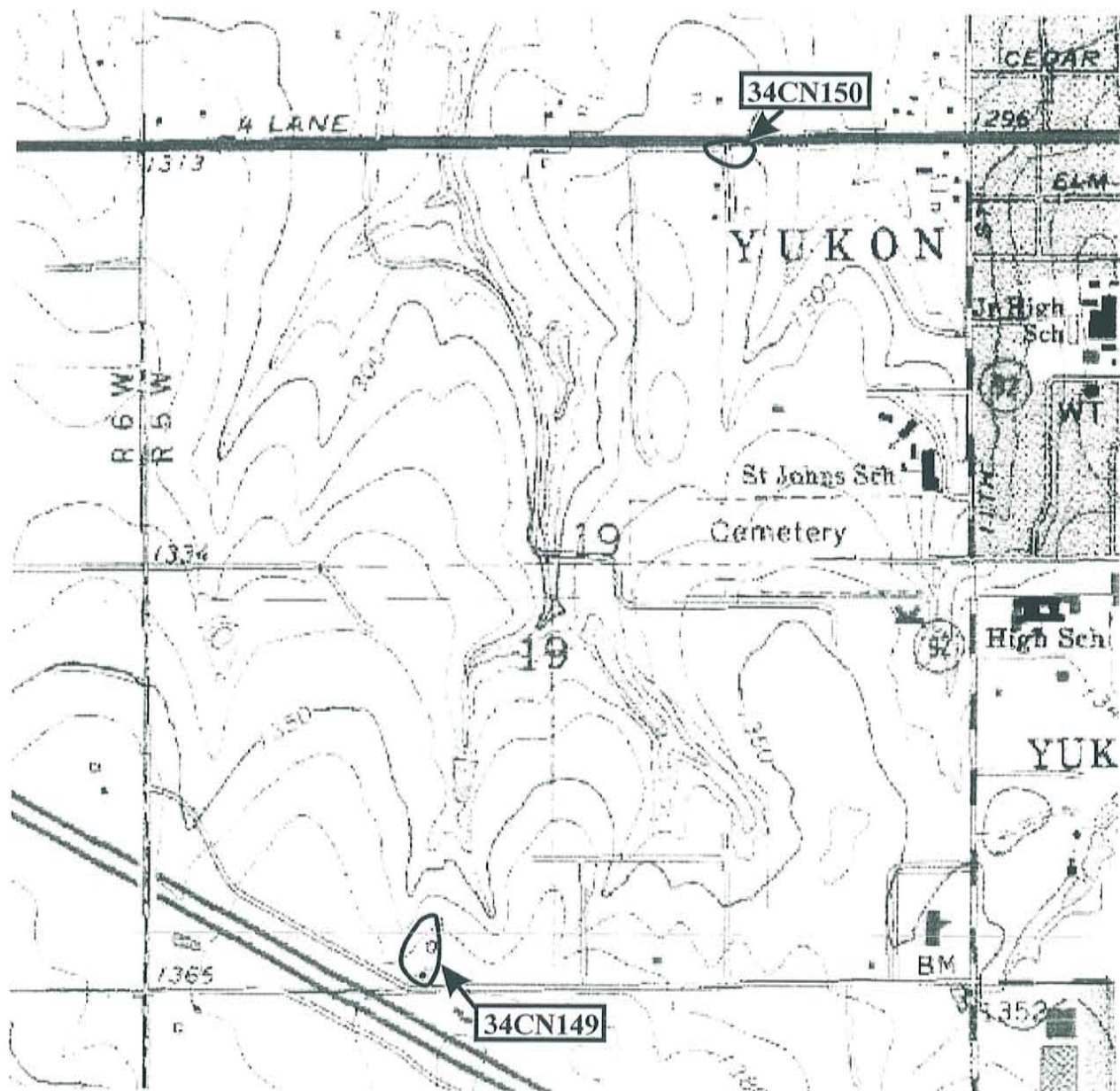
- ☐ National Register Property
- ☐ Eligible for National Register
- ☐ Nominated to National Register by SHPO
- ☐ Considered eligible but not nominated by SHPO
- ☒ Inventory Site
- ☐ National Register status not assessed

29. Discuss the Potential Significance of the Site

This site has been heavily impacted and other than a water well and the intact cellar, no features or artifactual evidence of this site remains. This site does not appear to meet the eligibility requirements for inclusion in the NRHP and no further archeological concern is warranted.

30. Published or Forthcoming Reports on the Site

Report on the Cultural Resources Inventory of the USACE and City of Yukon
Waterline Project, Yukon, Canadian and Oklahoma Counties, Oklahoma



Christopher A. Cojeen
Principal Investigator

Archaeology
Research
History

**REPORT ON THE CULTURAL RESOURCES INVENTORY OF
A REVISED PROPOSED ELEVATED WATER STORAGE TANK LOCATION
OF THE USACE AND CITY OF YUKON WATERLINE PROJECT
LOCATED IN YUKON, CANADIAN COUNTY, OKLAHOMA**

Project Name: Revised Storage Tank Location, USACE and City of Yukon Waterline
Project located in Yukon, Canadian County, Oklahoma
Prepared For: Triad Design Group

Project Location: Portions of the E/2 NE/4 of Section 24 T12N, R6W
Map Reference: Richland, Oklahoma 7.5-minute USGS quadrangle 1990

Records Search: Christopher Cojeen and Amy Cojeen, 2/9/2005
Survey: Christopher Cojeen and Amy Cojeen, 2/10/2005
Report by: Christopher Cojeen and Thomas Lindsey, 2/12/2005

ABSTRACT

A Cultural Resources inventory of a revised elevated water storage tank location as part of the City of Yukon in cooperation with the United States Army Corps of Engineers (USACE) Yukon Waterline Project was performed February 10, 2005, by Cojeen Archeological Services (CAS), of Norman, Oklahoma. Triad Design Group contracted this work for submission to the USACE and the City of Yukon. The inventory included background file searches at the Oklahoma Archeological Survey (OAS), and pedestrian field survey in the proposed storage tank location in portions of the E/2 NE/4 of Section 24 T12N, R6W, Canadian County, Oklahoma. No previously recorded archeological sites were identified as being in the study area.

The proposed elevated water storage tank will be located in a 500 ft by 500 ft area. This is a revised location from a previously studied location (Burkhalter and Cojeen 2004) in the W/2 NW/4 of Section 19 T12N, R5W, directly across the N/S section line roadway (Czech Hall Road). The inventory area includes approximately 5.7 acres.

No archeological sites were located during the survey, and archeological clearance is recommended for the location as currently proposed.

1. INTRODUCTION

PROPOSED ACTION

The City of Yukon in cooperation with the United States Army Corps of Engineers (USACE) proposes to construct a new elevated water storage tank associated with a transmission pipeline from the City of Yukon Well Field. The proposed storage tank is located on the west side of Yukon, Oklahoma.

PROJECT LOCATION

The proposed storage tank is located in portions of the E/2 NE/4 of Section 24 T12N, R6W, Canadian County, Oklahoma (Figure 1). The proposed elevated water tower will be located in a 500 ft by 500 ft area. The inventory area includes approximately 5.7 acres. The study area is located in a cultivated field setting amid an uplands area south of the North Canadian River. The project area is located on private unrestricted lands.

USGS MAP SOURCES

The project is on the Richland (1990), Oklahoma 7.5 minute USGS quadrangle.

2. NATURAL SETTING

GEOLOGY AND GEOMORPHOLOGY

The project lies within the Central Redbed Plains Geomorphic Province of the Great Plains province of the Interior Plains geomorphic division (Fenneman 1946) and the Mixed Grass Prairie Plains Vegetational Region (Risser ed. 1974).

Soils in the project area are derived mostly from local Permian bedrock material with some Quaternary and Recent fluvial deposits along nearby drainages. Soils are mostly sand, silt, and clay based and are shallow, reddish-orange in the upland areas and deep, reddish-brown colored soils in lowland areas.

CLIMATE AND HYDROLOGY

At present, the study area has a temperate, subhumid climate, typical of the central part of Oklahoma. Seasonal changes vary in intensity, but the changes between seasons are gradual. Summer is usually the wettest season. Average annual precipitation varies from 60 cm to 90 cm. Elevation in the project area is approximately 1,330 ft. (409m) above sea level.

Current land use in the study area consists of cultivated lands.

Figure 1. Study area (Richland, Oklahoma 7.5-minute USGS quadrangle 1990).

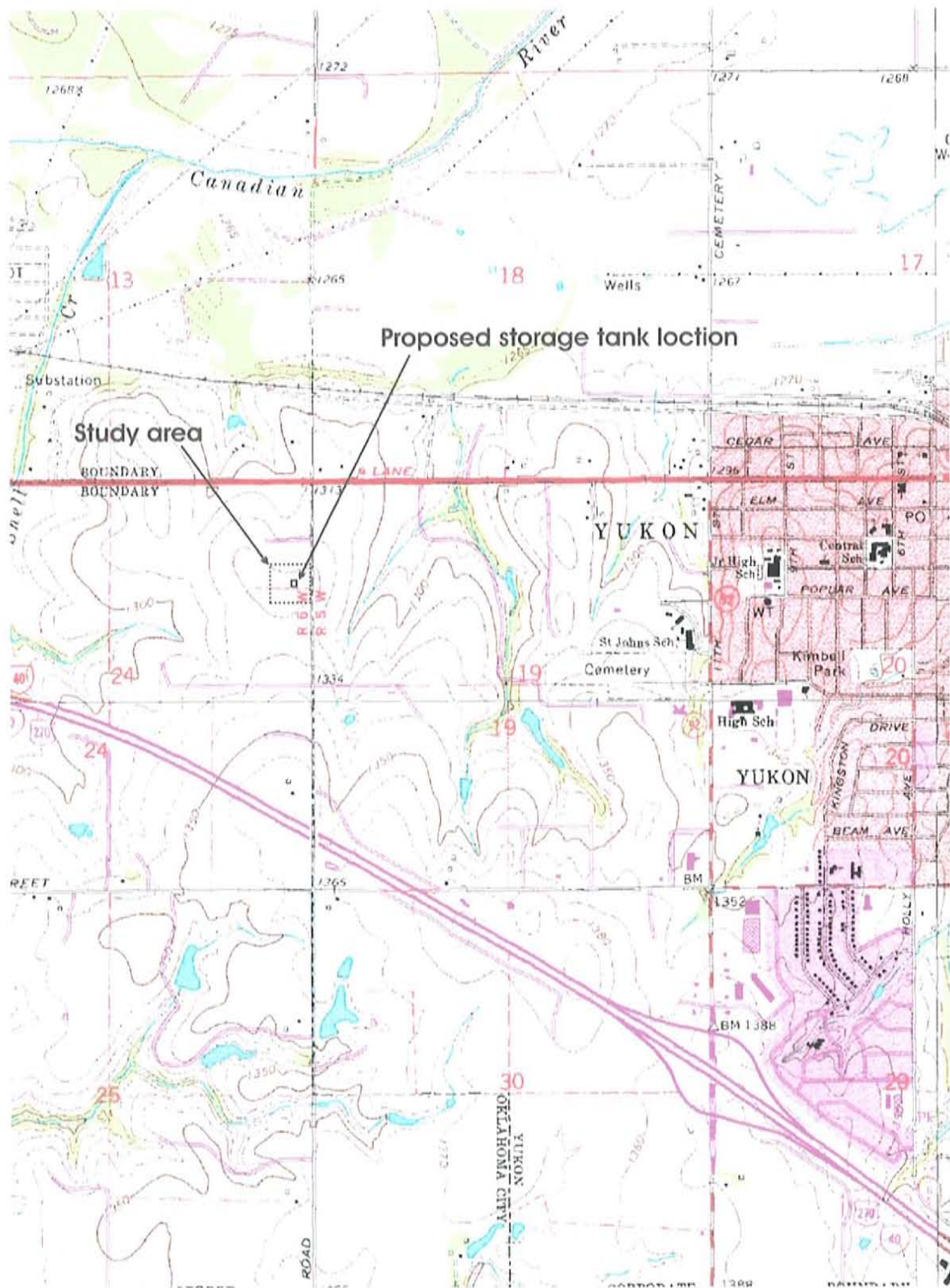
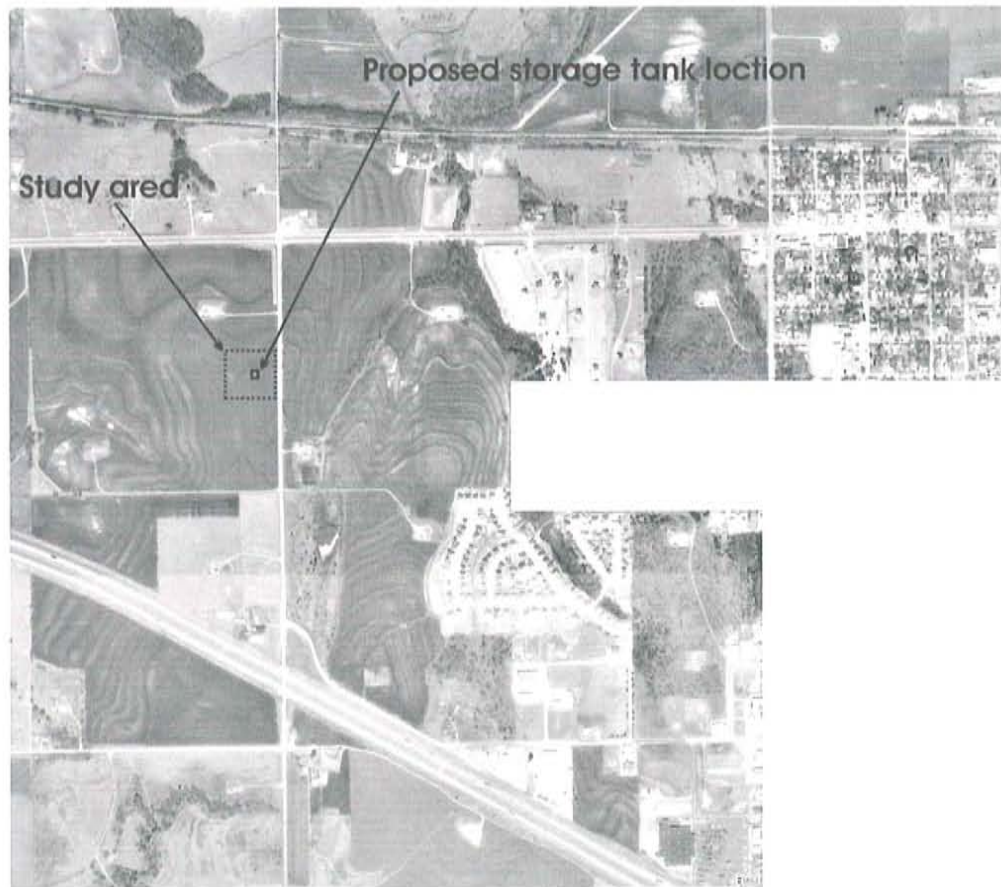


Figure 2. 1995 aerial photograph of proposed tank location.



FLORA AND FAUNAL RESOURCES

The natural vegetation in the project area is associated with the Mixed Grass Prairie Plains, dominated by a combination of species found in the tall grass and short grass prairies, with the lower layer of grasses and forbs usually denser than the taller one. Low needle-leaf evergreen trees are scattered over the prairie, creating a savanna-like vegetation community. The dominant plants on the uplands are red cedar (*Juniperous virginiana*), big and little bluestem, sideoats grama, blue grama, and hairy grama (*Bouteloua hirsuta*). Small groves of low broadleaf deciduous trees and shrubs occur in valley bottoms and on north-facing slopes. The dominant species in these groves are hackberry (*Celtis occidentalis*), cottonwood, burr oak, plum (*Prunus* sp.), and coralberry (*Symphoricarpos orbiculus*).

The wooded areas in the bluestem-grama prairie have fewer arboreal species and smaller trees as compared to forested areas to the east. Cottonwoods, junipers (*Juniperus virginiana*), and burr oaks are widely spaced along streams and rivers, and very few herbs are present in the understory.

Shelford (1963) describes typical animal populations and their changes through relatively recent time. Historically, the major grazing animals in the area were bison and pronghorn. Major predators were the wolf, coyote, and kit fox. Woodlands along streams supported wapiti, deer, and cottontail. Additionally, there were many burrowing animals (prairie dogs, pocket mice, kangaroo rats, etc.) and their predators (badger, black-footed ferret, etc.). At the time of the survey, deer, rodent burrows, snakes, lizards, frogs, and several species of birds were the only obvious evidence of the local animals. A more comprehensive list is included in Hofman et al. (1989).

The majority of the survey route crossed developed residential and business areas with a short segments of pasture land that has vegetation consistent with the Mixed Grass Prairie Plains. Mixed hardwoods line area streams. Red cedar and Hackberry are common on uplands. Soils are mostly deep, dark brown to brown silty clay loams.

3. CULTURAL SETTING

INTRODUCTION

The proposed Yukon Waterline Project lies within the Southern Great Plains archeological province (Hofman et al. 1989), in the Central Plains habitat of Oklahoma. Numerous archeological projects and research have been conducted in the Central Great Plains area since the early 1900s (Hofman et al. 1989). The discussion below will be restricted primarily to research conducted in the project area and the immediate surrounding area of central Oklahoma.

PREFIELD INVESTIGATIONS AND RECORDS CHECK

CAS personnel contacted the OAS in October 2004 to review information on previously recorded cultural resources in the project vicinity. **No previously recorded archeological sites are located within the proposed corridor.** OAS records indicate three previously recorded sites are within approximately one mile of the proposed project corridor. According to the most recent listings, there is one NRHP property in the vicinity (within approximately 2 miles) of the project area. These resources are described in OAS files as follows, listed here to provide some indication as to the types of resources that may be observed in the study area:

Czech Hall, 2.2 miles South of Yukon, 11/25/80, A, 80003258

The Czech Hall, also known as Bohemian Hall, was built in 1925 and added to in 1935, 1939, 1954 and 1957. It is an approximately 40 by 80 foot building with a raised stage area and was built to accommodate gymnasts. An older, original hall, built in 1901, stood just north of the present structure and was demolished in the mid-1920's with portions being used to build the current structure.

The building is currently in use as a gathering place for dances, divadlos and social events. It is a focus of the larger Czech and Bohemian community, extending beyond Yukon into portions of Oklahoma and other states with active central European roots.

34CN66 (Custer-Mach site)

This is a prehistoric “potentially preserved hamlet or village” (Wyckoff and Brooks 1983) site located on a terrace above the North Canadian River, recorded by Robert Everett in 1981. Diagnostic artifacts located during the time of site recording include Young, Washita, Scallorn and Fresno style projectile points, shell and bone tempered cordmarked pottery, faunal remains, lithic flakes and debris, cores, and worked bone.

34CN149

This is a razed historic farmstead located along the north side of Northwest 23rd Street (Vandement Avenue). It consists of a sparse artifact scatter, fence and water well in an area of 10 to 30 percent surface visibility. A few cultivated plants including trees and bushes are present near the fence that surrounds the site area. Also present along the fence were some of the larger artifacts observed such as bricks and a terra cotta pipe segment. One house-sized leveled area was observed, however no artifacts or evidence of a foundation was noted. The entire site area covers about 20 by 30 meters.

The 15-minute USGS Chickasha topographic quadrangle map from 1904 shows a structure near this area and aerial photographs from 1941 to 1964 shows a farmstead at this location. The 1951 aerial photograph shows the clearest detail of this site. This image shows a house structure and associated outbuildings in the farmstead complex. This farmstead appears to have been abandoned shortly after Interstate 40 was completed through this area. The site is an early to mid-20th century farmstead that has been razed and no intact foundations or features other than a water well were observed. The artifact scatter is very sparse and includes only architectural debris. This site does not appear to meet the eligibility requirements for inclusion in the NRHP and no further archeological concern is warranted. Recorded by Cojeen Archaeological Services, 2004.

34CN150

This is a razed historic farmstead located along the south side of West Main Street (US Highway 66). It consists of a very sparse artifact scatter, a cellar and water well in an area of 40 to 60 percent surface visibility in cropped grasses in a well-maintained housing addition entryway. One house-sized leveled area was observed, however no artifacts or evidence of a foundation was noted. The entire site area covers about 20 by 40 meters.

The aerial photographs from 1941 to 1964 shows a farmstead at this location. The 1951 aerial photograph shows the clearest detail of this site, however this photograph was taken before US Hwy 66 was widened into a four-lane divided roadway. This image shows a house structure and associated outbuildings in the farmstead complex. This farmstead appears to have been abandoned and razed due to highway construction. This site has been heavily impacted and other than a water well and the intact cellar, no features or artifactual evidence of this site remains. This site does not appear to meet the eligibility requirements for inclusion in the NRHP and no further archeological concern is warranted. Recorded by Cojeen Archaeological Services, 2004.

Again, The above listed archeological sites are located outside of the project corridor and will not be impacted by this proposed tower relocation project.

RESEARCH GOALS

The investigations documented in this report were undertaken to record the surface expression of any cultural resources located in the study area of the proposed project. This was intended to be only an inventory of archeological sites visible on the ground surface or discovered through shovel probes excavated to depths of less than one meter. The major goals of this survey were: (a) identify both prehistoric and historic archeological sites within the project area; (b) to determine the eligibility of the identified sites for inclusion in the NRHP; and (c) to provide recommendations for the treatment of these sites.

Given the limited scope of the project, no attempt was made to produce detailed models of site settlement or to provide in-depth analysis of the limited artifact assemblage observed during the course of the project. Interpretation of cultural resources found has followed standard local practices. By strict definition, cultural resources are any evidence of human use or occupation, but for this project, the term was restricted to cultural remains that were at least 50 years in age.

RESEARCH METHODS

The pedestrian survey was conducted to document the surface and limited subsurface expression of any cultural resources located in the proposed Yukon Waterline Project r/w corridor.

The field methodology involved pedestrian transects, walked in a zigzag fashion, at intervals of approximately 15 m (50 ft) in the proposed r/w area. The proposed elevated water tower will be located in a 500 ft by 500 ft area. The inventory area includes approximately 5.7 acres. The entire proposed water tower location was covered by pedestrian means.

SURVEY CONDITIONS

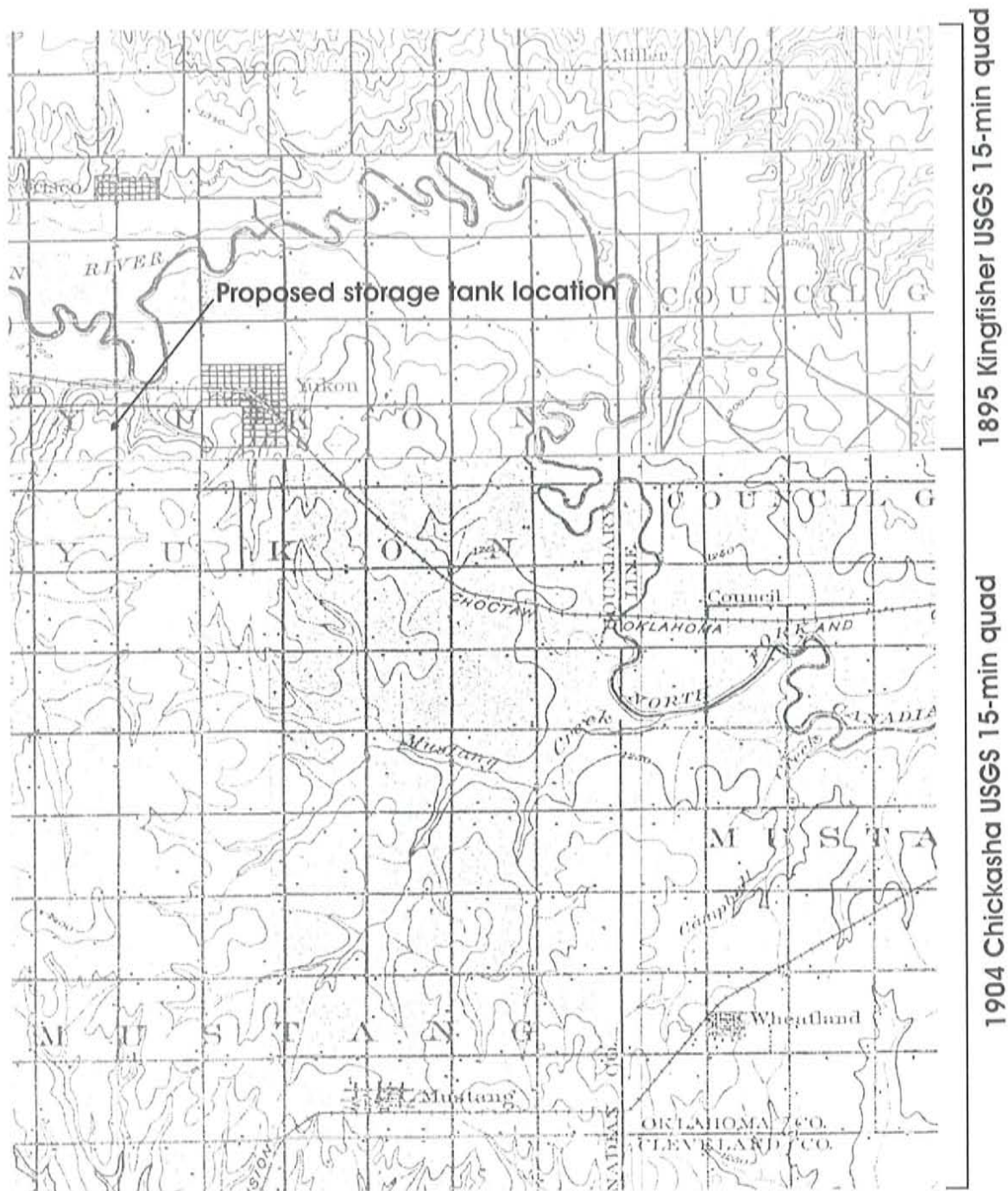
The inventory area yielded good to excellent surface visibility. The study area fell within a cultivated (winter wheat) field at the time of survey, offering approximately 60% surface visibility overall. Soils in the project area consisted on brown silty loams, sparsely included with small river gravels.

CARTOGRAPHIC REVIEW

A review of available cartographic resources was performed drawing on information obtained from the OAS, Oklahoma Geological Survey (OGS), the University of Oklahoma Library System and the Oklahoma Department of Libraries. These resources include both historic maps and historic aerial photographs. Scanned images or xerographic copies of these resources were obtained and used to: (a) locate historic resources in the project area; (b) aid in determining landform modifications; and (c) aid in the evaluation of located resources.

Reviewed topographic maps include the 15-minute USGS Kingfisher quadrangle from 1895 and 15-minute USGS Chickasha quadrangle from 1904.

Figure 4. Composite 15-minute USGS topographic maps of project area.



4. RESEARCH RESULTS

No cultural resources were observed during the course of this study, and archeological clearance is recommended for the project as it is currently planned and described in this report.



Christopher Cojeen
Principal Investigator

REFERENCES CITED

Burkhalter, Roger and Christopher Cojeen

2004 *Report on the Cultural Resources Inventory of the USACE and City of Yukon Waterline Project Located in Yukon, Canadian and Oklahoma Counties, Oklahoma.* Contract survey report; copies on file with the US Army Corps of Engineers, Tulsa District.

Hofman, J. L., R. L. Brooks, J. S. Hayes, D. W. Owsley, R. L. Jantz, M. K. Marks, and M. H. Manhein

1989 *From Clovis to Comanchero: Archeological Overview of the Southern Great Plains.* Research Series No. 35. Arkansas Archeological Survey, Fayetteville.

Risser, P. G. (editor)

1974 *Field Guide to Oklahoma.* Oklahoma Biological Survey, Norman.

Shelford, V. E.

1963 *The Ecology of North America.* University of Illinois Press, Champagne-Urbana.

Wyckoff, D. G. and R.L. Brooks

1983 *Oklahoma Archeology: A 1981 Perspective of the State's Archeological Resources, their Significance, their Problems and Some Proposed Solutions.* Archeological Resource Survey Report No. 16, Oklahoma Archeological Survey, Norman.

Appendix - E

Public Comments



STATE OF OKLAHOMA
WATER RESOURCES BOARD
www.owrb.state.ok.us

OKLAHOMA WATER RESOURCES BOARD
Planning & Management Division
Oklahoma City, OK

PUBLIC NOTICE REVIEW

☐ We have no comments to offer. ☒ We offer the following comments.

WE RECOMMEND THAT YOU CONTACT THE LOCAL FLOODPLAIN ADMINISTRATOR FOR POSSIBLE PERMIT REQUIREMENTS FOR THIS PROJECT. THE OWRB WEB SITE, www.owrb.state.ok.us, contains a directory of floodplain administrators and is located under forms/floodplain management/floodplain administrators, listed alphabetically by name of community. If this development would fall on state owned or operated property, a floodplain development permit is required from OWRB. The Chapter 55 Rules and permit application for this requirement can be found on the OWRB web site listed above. If this project is proposed in a non-participating community, try to ensure that this project is completed so that it is reasonably safe from flooding and so that it does not flood adjacent property if at all possible.

Reviewer Planning Section DATE 02/14/2007

Project Name Proposed 24 inch water transmission line along SW 29th Street and the construction of associated storage facility.

FIRM Name Triad Design Group-Tiana P. Douglas.





Received by
Bureau of Land Management

FEB - 5 2007

Bureau of Land Management Oklahoma Field Office 221 N. Service Road Moore, OK 73160
No BLM interests will be affected by this proposed action.
Thank you for the opportunity to comment.
By <u>Bar Pugh</u>
Date <u>2/12/07</u>

January 31, 2007

TO INTERESTED PARTIES:

On behalf of the City of Yukon, Oklahoma, and the Corps of Engineers, Triad Design Group has assessed the environmental impacts of a 24-inch Water Transmission Line and associated storage facility. The water transmission line extends along the south side of Southwest 29th Street from approximately 1/2 mile east of Council Road in Oklahoma City, Oklahoma, approximately 5.5 miles west then north approximately 3 miles on the west side of Czech Hall Road to Northwest 10th Street in Yukon, Oklahoma. Additionally, there is a storage tank facility proposed and approximately 2 miles of associated supply pipeline.

This assessment was prepared in accordance with U. S. Army Corps of Engineers Regulations, Part 230, Policies and Procedures for Implementing the National Environmental Policy Act. It has been determined from the enclosed Environmental Assessment that the project will have no significant adverse impact on the natural or human environment.

The Draft Environmental Assessment is enclosed for your review. If you have comments they should be submitted within 30 days from the date of this letter to Triad Design Group, ATTN: Mary Cordell, 3020 Northwest 149th Street, Oklahoma City, Oklahoma 73134.

Sincerely,

Tiana P. Douglas
Triad Design Group

Enclosure

*Disc Full on
Adobe Acrobat
(Not Word)*



Oklahoma Archeological Survey

THE UNIVERSITY OF OKLAHOMA

February 7, 2007

Tiana P. Douglas
Triad Design Group
3020 Northwest 149th Street
Oklahoma City, OK 73134

Re: Proposed 24 inch water transmission line and storage facility, City of
Yukon. Legal Description: E ½ NE ¼ Section 24 T12N R6W, Canadian
County, Oklahoma.

Dear Ms. Douglas:

We concur with the findings presented in the Environmental Assessment conducted for the US Army Corps of Engineers. A review of our files indicate that this area was examined for cultural resources by Christopher Cojeen on February 10, 2005 with no cultural resources documented in the area of potential effect. Thus, we have no objection to completion of the project.

This review has been conducted in cooperation with the State Historic Preservation Office, Oklahoma Historical Society.

Sincerely,

Robert L. Brooks
State Archaeologist

Appendix - F

Newspaper Public Notice

Announcing COMMENT PERIOD
DRAFT ENVIRONMENTAL ASSESSMENT
As related to the
CONSTRUCTION OF A 24" WATER TRANSMISSION
LINE AND ASSOCIATED STORAGE FACILITY
In compliance with The National Environmental Policy Act
FORMAL COMMENT PERIOD: February 3, 2007 through
March 7, 2007

The Draft Environmental Assessment addresses the environmental and socioeconomic effects of the construction of the 24" water transmission line and associated storage facility. The comment period is a continuation of public involvement used to develop the Draft Environmental Assessment. The public is invited to review the Draft Environmental Assessment and make comments. A copy of the assessment is available at:

Mabel C. Fry Public Library
1200 Lakeshore Drive
Yukon, Oklahoma 73099

Written comments and questions will be addressed in the Final Environmental Assessment. To be included in the final assessment, comments and questions must be received prior to the close of the formal comment period. Comments and questions about the draft assessment or the comment process can be directed to:

Ms. Mary Cordell
Triad Design Group
3020 Northwest 149th Street
Oklahoma City, Oklahoma 73134
Phone 405-752-1122
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Announcing
COMMENT PERIOD

DRAFT ENVIRONMENTAL
ASSESSMENT

As related to the

CONSTRUCTION OF A 24
WATER TRANSMISSION

LINE AND ASSOCIATED
STORAGE FACILITY

In compliance with

The National Environmental
Policy Act

FORMAL COMMENT
PERIOD: February 3, 2007
through March 7, 2007

The Draft Environmental
Assessment addresses the
environmental and
socioeconomic effects of the
construction of the 24 water
transmission line and associated
storage facility. The
comment period is a continuation
of public involvement used to
develop the

Draft Environmental Assessment.
The public is invited
to review the Draft Environmental
Assessment and
make comments. A copy of
the assessment is available
at:

Mabel C. Fry Public Library

1200 Lakeshore Drive

Yukon, Oklahoma 73099

Written comments and questions
will be addressed in the
Final Environmental Assessment.
To be included in the
final assessment, comments
and questions must be received
prior to the close of
the formal comment period.
Comments and questions
about the draft

assessment or the comment
process can be directed to:

Ms. Mary Cordell

Triad Design Group

3020 Northwest 149th Street

Oklahoma City, Oklahoma
73134

Phone 405-752-1122

Facsimile 405-752-8855

STATE OF OKLAHOMA, }
COUNTY OF OKLAHOMA } SS.

Affidavit of Publication

Helen L. Boswell, of lawful age, being first duly sworn, upon

oath deposes and says that she/he is the Classified Legal Notice Admin
of The Oklahoma Publishing Company, a corporation, which is the publisher of *The Oklahoman* which is a daily newspaper of general circulation in the State of Oklahoma, and which is a daily newspaper published in Oklahoma County and having paid general circulation therein; that said newspaper has been continuously and uninterruptedly published in said county and state for a period of more than one hundred and four consecutive weeks next prior to the first publication of the notice attached hereto, and that said notice was published in the following issues of said newspaper, namely:

TRIAD DESIGN GROUP, INC

366834 - The Oklahoman

Published on 02/02/2007

Helen L. Boswell

Subscribed and sworn to before me this 3-19-07

Cathy A. Keller

Notary Public

My commission expires _____

